c 226

ROSS INSTITUTE OF
TROPICAL HYGIENE
ROOM 23

CITY COUNCIL OF SINGAPORE

ANNUAL REPORT OF THE
HEALTH DEPARTMENT
1954

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE
LIBRARY
17 JUL 1968

Printed at the Government Printing Office, Singapore,
by F. S. Horslin, Government Printer

1955

ANNUAL REPORT OF THE
HEALTH DEPARTMENT
1954

BY

H. R. MORRISON, M.B., CH.B., D.P.H.
City Health Officer

PRINTED AT THE GOVERNMENT PRINTING OFFICE, SINGAPORE,
BY F. S. HORSLIN, GOVERNMENT PRINTER

1955

Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

https://archive.org/details/b31753243

CONTENTS

REPORT OF THE CITY HEALTH OFFICER . . . 1

ANTI-MOSQUITO DEPARTMENT 29

CHEMICAL LABORATORY 40

BACTERIOLOGICAL LABORATORY 52

MATERNITY AND INFANT WELFARE DEPARTMENT . . . 57

MIDDLETON HOSPITAL 61

MARKETS 70

ABATTOIRS 74

SANITARY INSPECTORS SECTION 77

CITY HEALTH DEPARTMENT

I have the honour to submit my report on the working of the Health Department during the year 1954.

When reading this report and appendices it must be borne in mind that the rates quoted are uncorrected for "inward" or "outward" transfers unless otherwise stated; that patients from outside the town entering hospitals and other nstitutions providing medical facilities in the town adversely affect our Death and Infectious Diseases Rates; that the age and sex distribution of our population is still abnormal; and that the number of deaths shown as due to the various diseases must necessarily be inaccurate, as something like 25 per cent of the persons who die in Singapore have had no medical advice or treatment before death, and the causes of their deaths have had to be surmised by Inspecting Officers without the aid of clinical observations or autopsies.

MID-YEAR POPULATION

The Registrar of Statistics' figure for our estimated mid-year population, on which the statistics in the appendices are based is shown by races in the table which follows:—

ESTIMATED MID-YEAR POPULATION BY RACES, 1954

Malaysians	88,612
Chinese	646,589
Indians and Pakistanis	65,151
Europeans	11,045
Eurasians	9,642
Others	9,576
Total	830,615

Details concerning notifiable infectious disease, vital statistics, etc. and the work carried out by the various sub-departments are set out in appendices as ollows:—

A—Notifiable Infectious Diseases.

B—General measures to combat spread of Infectious Diseases—Vaccination, etc.

C—Birth and Still-Birth Statistics.

D—General Death Rate, Infant Mortality Rate, Neo-natal Rates, etc., Principal Causes of Death, Death by whom certified.

E—Markets, Food, Licences Issued, Abattoirs, Burial Grounds; and in the appended reports and returns of:—

- Anti-Mosquito Department.
- Analyst.
- Bacteriologist.
- Infant Welfare Department.
- Superintendent, Middleton Hospital.
- Market Inspector.
- Superintendent, Abattoirs.
- Chief Sanitary Inspector.

SUMMARY OF PRINCIPAL STATISTICS, 1954

BIRTHS AND DEATHS ETC.—ALL RACES COMBINED

Total births registered	40,935
Total deaths registered	8,374
Excess of births over deaths	32,561
Birth Rate	49.28
Death Rate	10.08
Malaria Death Rate	.026
Infantile Mortality Rate	59.66
Neo-natal Rate	30.39
Still–Birth Rate per 1,000 live and still births	23.84
Maternal Mortality Rate per 1,000 live-births	1.34

DEATHS BY WHOM CERTIFIED

	1953 *Per cent*	1954 *Per cent*
Medical Practitioners	66.63	65.25
Inspecting Officers	22.99	22.45
Coroner	10.38	12.30

NOTIFIABLE INFECTIOUS DISEASES IN 1954

	Cases Notified		*Deaths*
Tuberculosis (all forms)	3,137	(including 557 non-residents)	833
Typhoid	149	(including 29 non-residents)	15
Paratyphoid	1	(including 1 non-resident)	..
Diphtheria	349	(including 82 non-residents)	39
Leprosy	165	(including 45 non-residents)	..
Poliomyelitis	78	(including 25 non-residents)	4
Small-pox, Cholera, Plague	Nil.	Nil.	Nil.

DEATHS CERTIFIED AS DUE TO SOME OF THE NON-NOTIFIABLE INFECTIOU AND PARASITIC DISEASES IN 1954

	1953	1954
Dysentery—Bacillary	8	15
Unspecified	14	14
Amoebic	21	15
Malaria	33	22
Influenza	41	21
Whooping Cough and complications	1	..
Measles and complications	12	17
Lepto-spirosis icterohaemorrhagica (Weil's Disease)	3	3
Tetanus	51	18

NON-NOTIFIABLE INFECTIOUS DISEASES TREATED AT THE MIDDLETO HOSPITAL IN 1953 AND 1954

	1953	1954
Measles and Rubella	117	183
Whooping Cough	7	10
Amoebic Dysentery	134	122
Bacillary Dysentery	25	18
Clinical Dysentery	16	34

VACCINATION

Age Group (0—1)	31,802
Age Group (1—5)	1,451
Age Group (5 and over)	124
Total Vaccinated and Revaccinated	33,377

MATERNITY AND INFANT WELFARE DEPARTMENT HOME VISITS BY SISTERS AND HEALTH VISITORS

	1953	1954
Mothers visited by District Sisters within 10 days of confinement	21,834	21,340
Visits by Health Visitors to individual new babies ..	30,225	30,924
Subsequent visits by Health Visitors to new babies ..	58,969	61,771
Visits to expectant mothers	4,138	5,616
Visits made in connection with Anti-Diphtheria Immunisation	3,757	5,805
Total visits to homes by Sisters and Health Visitors ..	118,923	125,456

ATTENDANCES AT CLINICS

	1953	1954
Infants (0–1)		
1st attendances	19,625	22,383
Subsequent attendances	103,316	118,175
Total attendances ..	122,941	140,558
Preschool Children		
1st attendances	6,380	4,379
Subsequent attendances	5,302	3,425
Total attendances ..	11,682	7,804
Expectant Mothers		
1st attendances	2,895	3,643
Subsequent attendances (corrected figure) ..	7,380	9,336
Total attendances (corrected figure) ..	10,275	12,979

DIPHTHERIA IMMUNISATION—COMPLETE COURSES

	1953	1954
Infants (0–1)	6,049	10,616
Preschool children (1–5) ..	4,325	25,762

Of the 10,616 infants immunised at the Clinics during the year 175 were Immunised against whooping cough as well as diphtheria.

COUNCIL FREE MIDWIFERY SERVICE

	1953	1954
Confinements attended by Council Midwives ..	1,364	1,426
Visits paid to cases discharged from Government Maternity Hospital three days or so after confinement	3,233	2,862
Visits subsequently paid to known cases of confinement not attended by Doctors or Midwives ..	181	118

CONDUCTION OF CONFINEMENTS

	1953	1954
Government Maternity Hospital	17,692	19,692
Private Maternity Homes and by Private Doctors ..	3,269	3,999
Private Midwives	15,879	14,793
Council Midwives	1,364	1,426
No skilled attention at confinement	1,464	1,253
Total ..	39,668	41,163

HEALTH OF STAFF

AVERAGE STRENGTH OF JUNIOR, SUBORDINATE AND OPEN VOTES STAFF STATIONED IN SINGAPOR IN 1954

*(*a*) Approximate number of Junior and Subordinate Staff stationed in Singapore including temporary staff paid out of "Extra Clerical and Technical Assistance Votes" but excluding females	2,309
†(*b*) Approximate number of Open Vote employees stationed in Singapore excluding females and juveniles ..	9,443

* Figure obtained by Assistant Secretary (Establishments) from Departments.
† Figure obtained from Welfare Officer.

——	Staff (*a*)	Open Votes (*b*)	Total (*a*) and (*b*)
New cases attended at dispensaries	5,123	30,086	35,209
Total attendances including first visits at dispensaries	10,912	82,888	93,800
Examinations for physical fitness	644	1,156	1,800
Visits paid to homes by M.O. i/c. Staff	57	35	92
Cases treated by Private Doctors	1,460	5,071	6,531
Days sick leave granted including leave on account of Tuberculosis by:—			
(*a*) M. Os. i/c. Staff	8,453	60,074	68,527
(*b*) Private Practitioners	4,472	17,578	22,050
(*c*) Hospitals	3,829	14,867	18,696
Total ..	16,754	92,519	109,273
Days leave granted on account of Tuberculosis ..	224	2,698	2,922
Average number of days sick leave including tuberculosis leave granted per male person employed in Junior, Subordinate and Open Votes Staff and Temporary Staff in 1954	7.2	9.8	9.3

During the year a system of Medical Record Cards for Open Vote employees was inaugurated in the Dispensaries. Additional staff was recruited an doctors were able to spend more time on their cases.

There are now four full time doctors engaged in the medical care of t Junior Staff and Open Vote employees. Female employees are looked after the Senior Assistant Health Officer, Maternity and Infant Welfare Departme and are not included in the above figures.

The total staff under the care of these doctors is 11,752 which works c at 2,938 per head per doctor. The total number of days sick leave granted 1954 was 109,273 compared with 133,320 in 1953 and the average number days sick leave per person has fallen from 12.6 in 1953 to 9.3 in 1954.

The points of special interest or importance in connection with the working of the Department during the year were as follows:—

TYPHOID

There were 120 cases of Typhoid in City residents reported during the year as against 89 in the previous year.

No carrier or other source of infection was traced which could account for any of the cases notified during the year.

DIPHTHERIA

The figures for city residents since 1952 are as follows:—

Year	*Cases Notified*	*Deaths*
1952	352	86
1953	245	56
1954	267	39

As has been observed in previous years, a large proportion of these cases were laryngeal and tracheal (114 out of the 345 cases admitted to Middleton Hospital). Tracheotomy was performed in 85 of these cases among whom 23 of the deaths occurred.

A campaign to persuade parents to have their children immunised against diphtheria was carried out in March of the year. Over 10,000 infants under one year of age were immunised during the year. This is only about 25 per cent of the infant population. However, it is an increase over the previous year when about 6,000 were immunised. Further efforts will require to be made to increase the percentage of immunised infants to somewhere in the region of 70 per cent of the total births, which if attained, would lead to a very considerable reduction in the numbers of cases of diphtheria. It is hoped that parents will be persuaded to bring their children in much greater numbers in future so that this scourge may be reduced to the negligible proportion achieved in other countries.

POLIOYMELITIS

There were fifty-three cases in residents and twenty-five in non-residents reported during the year compared with thirty and fifteen in 1953. Seventy of the cases were admitted to Middleton Infectious Diseases Hospital. All these were paralytic cases so that it would appear that non-paralytic cases are not being recognised and reported. Only two deaths occurred and the majority of cases (87 per cent if the cases in Europeans are excluded, only four of the nine cases in Europeans being under 5 years of age) were under 5 years of age.

DEATH AND INFANTILE MORTALITY RATES

The Crude Death Rate per thousand of the population and Infantile Mortality Rate per thousand live births for the year were the lowest ever recorded being 10.08 and 59.66 respectively. As stated in my opening paragraph it has not been possible to produce a Death Rate corrected for transfers or based on a standardised population. The age and sex distribution of the population in Singapore is still abnormal. Although the Infantile Mortality Rate is still high, it has fallen considerably during the last 20 years being 179.3 in 1934. In 1947 it was 96.7 and has dropped steadily since.

The main causes of infantile mortality recorded were bronchitis and pneumonia, diseases of early infancy, diarrhoea and enteritis which accounted for 45.60 deaths per thousand live births. For comparison, these diseases caused 53.6 deaths per mille in 1948 with convulsions causing a further 14.9 per mille out of the total Infantile Mortality Rate of 83.31. In 1954 convulsions accounted for 3.59 deaths per mille.

MALARIA

As in past years, the incidence of malaria in Singapore remains very lo and the death rate was .025 per thousand as compared with .041 in 1953. Th death rate for the years 1948 to 1952 were 0.223, 0.151, 0.138, 0.072 and 0.04 respectively. This good record with regard to malaria can only be maintaine by constant vigilance and by maintenance of the existing anti-malarial works The total cost of malaria control during the year was $920,365 which work out at $1.07 per head of population.

The Kallang Basin Area remains the potential breeding place of *A. sundaicus*, a malaria vector. The City Cleansing Department is reclaiming b controlled tipping, part of the area. No. *A sundaicus* breeding was found durin the year in this area, but weekly inspections are carried out to ensure that th sluice gates of the prawn ponds are opened to prevent growth of algae. Anti-malaria oil continues to be used although experiments are being carried ou with other insecticides. They have not proved successful enough yet to replac anti-malaria oil, particularly in *A. sundaicus* control.

During the strike of the Labour Force which lasted for 12 days in Jul larvacidal works were carried out by the permanent staff with a skeleton labou force recruited from the Labour Exchange. During December, severe flood caused very considerable damage to anti-malarial drains and it is estimated tha the damage cost $25,500 for labour and materials.

ANALYST'S DEPARTMENT

The Analyst's Department during the year carried out extensive investigations into the chemical treatment of water on behalf of the Water Departmen Details are given in the Analyst's Report but it should be recorded that abo two years intensive research and investigational work yielded results beyon expectation. It has now been established that by utilising the new treatme purification works can produce more water in the same installation, whic should result in future saving on capital expenditure on water treatment plan

FOOD AND DRUGS

During the year Dr. Danaraj of the Department of Social Medicine an Hygiene reported that several cases of lead poisoning had been discovered i the General Hospital and that the source of lead was suspected to be a Chine medicine known by the name of *Choo Sa Sng Sa*. This substance is widely use by Chinese Medicine men and consists of mercuric sulphide. Samples take however, were found to contain as much as 14.2 per cent of lead. As a resu of this, our Food and Drugs Inspectors were instructed to take further sampl of Chinese Medicines and a number were found containing lead.

Prosecution of the vendors followed and publicity was given in the pre to the danger of such drugs. The Chinese medicines containing a high lea content have now disappeared from the shops, but we will continue to ta further samples from time to time.

INFANT WELFARE DEPARTMENT

The steady rise in the number of births during post war years still continue 125,456 visits to homes of mothers and infants were made by Sisters and Heal Visitors during the year as against 118,923 during 1953. 22,383 new infan were seen at the Clinics in the course of the year as against 19,625 in the previo year, and the total number of attendances of infants at the Clinics was 140,5 as against 122,941 in 1953.

During the year, the number of cases delivered in hospital continued to increase, the figures being 19,692 compared to 17,692 in 1953, and there was a drop in the number of mothers visited by Sisters in the puerperium.

During the year the Government Maternity Hospital instituted a follow up service. A selected number of cases were being sent home about 24 hours after delivery. The number of visits to mothers who had been discharged from hospital about three days after delivery fell from 3,233 to 2,862 on account of this Government service. This enabled our Midwives to deliver in the district more cases than previously, and 62 more cases were delivered by them this year than during the previous year. The number of self-attended cases where no skilled attention was given continued to decrease and the percentage of such confinements was 3.04 for the year. Unfortunately eight deaths due to tetanus neonatorum occurred among them.

An increasing number of mothers came to the Infant Welfare Clinics with their problems of infant management and particularly in the Balestier and Tiong Bahru Clinics considerable congestion occurs. Two new clinics, however, are under construction; one to replace that at Towner Road and Balestier Road junction and the other, at the junction of MacPherson Road and Aljunied Road, which should ease the position.

One nurse went to England on a Sino-British Scholarship where she is studying for the Royal Sanitary Institute Certificate for Health Visitors. This certificate unfortunately is not available in Singapore and it is hoped that more Health Visitors will be sent abroad for training.

WAR DAMAGE CLAIMS

The Health Department Claim for War Damage was settled by the War Damage Claims Commission. An award of $365,827 was made, the details being as follows:—

	$
Abattoirs	52,061
Anti-Mosquito Department.. ..	217,739
Cemeteries	24,273
Infant Welfare Department ..	15,027
Markets	27,177
Middleton Hospital	11,097
Library	1,434
Analyst's Department	9,247
Bacteriologist's Department ..	6,064
Dispensary	1,708

The claim in respect of anti-malarial works was the most controversial. A very considerable amount of time was spent by both the Superintendent, Anti Mosquito Department and the Assistant Treasurer, Mr. Harte in respect of this Claim. The records of work done in all anti-malarial areas which had been meticulously kept by the late Mr. Benjafield, formerly Chief Sanitary Inspector, and maintained up to date by the Department proved to be invaluable.

HOUSING AND OVERCROWDING

Although the City Council is not concerned with the provision of houses, this report would not be complete if reference were not made to the insanitary and overcrowded conditions which exist in both the central areas of the city and in the attap housing areas within the city. Every effort should be made to increase the accommodation available particularly of the lower rented houses.

Many of the old houses in the central areas are in such condition and so overcrowded that it is impossible to do anything to make them sanitary. From the health point of view, Central Re-development Schemes are urgently required.

STAFF

Dr. N. A. Canton, City Health Officer since 1939, went on leave prior to retirement in April and the writer was appointed Health Officer on 11th June. Dr. John Cameron and Dr. V. M. S. Thevathasan were appointed Deputy Health Officer and Senior Assistant Health Officer respectively from the same date. I have also to record with sorrow the death of Dr. P. S. Hunter who was Health Officer from 1923 to 1939. Singapore owes much of its good health record to Dr. Canton and to the late Dr. Hunter. Dr. Hunter was the architect of the present efficient anti-malarial control and it is to be hoped that their high standards will be maintained in the future.

Although at present there is little or no malaria and the dangerous infectious diseases are noticeable by their absence, the defences against them must be maintained, since smallpox, cholera and plague are still present in neighbouring countries and an outbreak of malaria could occur at any time if the anti-malarial works are neglected.

I would also like to take the opportunity of recording my appreciation of the way in which the staff have given their support.

H. R. MORRISON, M.B., ChB., D.P.H.,
City Health Officer.

Table 1

NOTIFIABLE INFECTIOUS DISEASES

The number of cases notified in persons who were stated to be ordinarily resident within the City Area in 1954 and in the previous five years are shown in the table which follows:—

—	1949	1950	1951	1952	1953	Average for 5 years	1954
Small-pox	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..
Typhoid Fever	61	129	85	136	89	100.0	120
Paratyphoid Fever	1	..	1	2	2	1.2	..
Diphtheria	241	224	392	352	245	290.8	267
Cerebro Spinal Fever	11	6	5	5	5	6.4	2
Typhus Fever*	24	13	15	16	9	15.4	15
Scarlet Fever	..	..	..	..	1	.2	..
Leprosy	158	180	142	95	124	139.8	120
Poliomyelitis	54	72	60	45	30	52.2	53
Anthrax	..	..	..	..	..	..	..
Puerperal Fever	53	82	69	78	43	65.0	52
Erysipelas	20	10	8	16	15	13.8	13
Chicken-pox	402	466	594	413	713	517.6	1,057
Tuberculosis	4,247	3,684	3,219	2,990	2,911	3,410.2	2,580
Total	5,272	4,866	4,590	4,148	4,187	4,612.6	4,279

* Under the heading of Typhus are included Tsutsugamushi or Scrup Typhus of Malaya (Mite borne) and Flea borne (Urban Type Tropical Typhus), Louse Borne Typhus has not been seen in Singapore.

Table 2

NOTIFIABLE INFECTIOUS DISEASES BY RACES FOR THE YEAR 1954

———	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Typhoid Fever ..	1	2	80	12	24	1	120
	(2)	(—)	(16)	(4)	(7)	(—)	(29)
Diphtheria ..	—	6	243	12	6	—	267
	(—)	(—)	(76)	(4)	(2)	(—)	(82)
Chicken-pox ..	6	42	403	76	523	7	1,057
	(—)	(4)	(79)	(50)	(159)	(—)	(292)
Puerperal Fever ..	—	—	13	35	4	—	52
	(—)	(—)	(3)	(—)	(—)	(—)	(3)
Poliomyelitis ..	8	—	39	3	1	2	53
	(1)	(—)	(19)	(4)	(1)	(—)	(25)
Cerebro-spinal Fever ..	—	—	2	—	—	—	2
	(—)	(—)	(2)	(—)	(1)	(—)	(3)
Tuberculosis ..	2	15	2,239	148	173	3	2,580
	(5)	(5)	(455)	(44)	(48)	(—)	(557)
Paratyphoid Fever ..	—	—	—	—	—	—	—
	(—)	(—)	(—)	(—)	(1)	(—)	(1)
Leprosy	—	—	102	5	13	—	120
	(—)	(—)	(42)	(—)	(2)	(1)	(45)
Typhus Fever ..	—	1	6	1	7	—	15*
	(—)	(—)	(4)	(—)	(1)	(—)	(5)†
Erysipelas ..	—	—	8	5	—	—	13
	(—)	(—)	(1)	(—)	(—)	(—)	(1)
Small-pox ..	—	—	—	—	—	—	—
	(—)	(—)	(—)	(—)	(—)	(—)	(—)
Cholera	—	—	—	—	—	—	—
	(—)	(—)	(—)	(—)	(—)	(—)	(—)
Total ..	17	66	3,135	297	751	13	4,279
	(8)	(9)	(697)	(106)	(222)	(1)	(1,043)

The figures not in brackets are of cases notified in persons ordinarily resident in the City Area.

The figures in brackets are Imported Cases and cases from Rural Board treated in Hospitals or Institutions in the City Area but not ordinarily resident in the City Area.

* 6 Flea Borne and 9 Mite Borne.

† 1 Flea Borne and 4 Mite Borne.

Table 3

NOTIFIABLE INFECTIOUS DISEASES BY MONTHS FOR THE YEAR 1954

(Figures in brackets are cases in non-residents)

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Typhoid Fever	4 (3)	5 (5)	13 (1)	4 (1)	2 (1)	12 (1)	16 (3)	17 (3)	14 (1)	12 (4)	8 (3)	13 (3)	120 (29)
Diphtheria	23 (7)	25 (6)	34 (8)	13 (6)	20 (4)	14 (6)	18 (7)	23 (5)	26 (5)	26 (11)	22 (11)	23 (6)	267 (82)
Chicken-pox ..	48 (11)	69 (21)	83 (23)	141 (29)	80 (20)	95 (25)	92 (6)	71 (19)	70 (32)	78 (32)	89 (33)	141 (41)	1,057 (292)
Puerperal Fever ..	4 (—)	1 (—)	3 (—)	1 (—)	4 (1)	2 (—)	8 (1)	4 (—)	7 (—)	6 (1)	4 (—)	8 (—)	52 (3)
Poliomyelitis ..	3 (—)	7 (5)	11 (5)	6 (3)	3 (3)	3 (3)	8 (1)	6 (2)	2 (—)	3 (1)	1 (—)	— (2)	53 (25)
Cerebro–Spinal Fever ..	1 (1)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (1)	— (1)	1 (—)	— (—)	2 (3)
Tuberculosis ..	201 (35)	203 (44)	243 (46)	194 (49)	248 (69)	228 (48)	250 (54)	186 (38)	230 (37)	193 (36)	227 (61)	177 (40)	2,580 (557)
Paratyphoid Fever ..	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (1)	— (—)	— (—)	— (1)
Leprosy	6 (1)	9 (3)	8 (3)	11 (7)	10 (3)	5 (9)	14 (2)	14 (5)	12 (3)	12 (4)	10 (2)	9 (3)	120 (45)
Typhus Fever ..	2 (—)	1 (—)	2 (—)	— (1)	1 (1)	— (—)	2 (1)	1 (—)	1 (1)	1 (—)	3 (1)	1 (—)	15 * (5)†
Erysipelas	— (—)	1 (—)	2 (—)	1 (1)	1 (—)	— (—)	— (—)	2 (—)	1 (—)	2 (—)	2 (—)	1 (—)	13 (1)
Small-pox	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)
Cholera	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)	— (—)
Total ..	292 (58)	321 (84)	399 (86)	371 (97)	369 (102)	359 (92)	408 (75)	324 (72)	363 (80)	333 (91)	367 (111)	373 (95)	4,279 (1,043)

* 6 Flea Borne and 9 Mite Borne.

† 1 Flea Borne and 4 Mite Borne.

Table 4

POLIOMYELITIS

CONFIRMED CASES NOTIFIED IN 1954 BY RACE, SEX AND AGE GROUPS
Table includes imported cases as well as in City Resident.
(Cases in service personnel and Families included)

	Europeans			Eurasians			Chinese			Malays			Indians			Others			Total		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
0– 5 years	3	1	4	..	..	..	29	20	49	4	2	6	1	2	3	2	..	2	39	25	64
5–10 ,, ...	1	..	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	2	..	2
10–15 ,, ...	..	..	..	..	..	..	2	1	3	..	..	..	..	..	..	..	..	..	2	1	3
15–20 ,, ...	..	1	1	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	2	1	3
20–25 ,, ...	1	..	1	..	..	..	1	1	2	..	..	..	..	..	..	..	..	..	2	1	3
25–35 ,, ...	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	1
35–45 ,, ...	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
45–55 ,, ...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	6	3	9	..	..	..	35	23	58	4	2	6	1	2	3	2	..	2	48	30	78

25 of the 78 confirmed cases of Poliomyelitis notified within the City Area were non-residents.

Table 5

POLIOMYELITIS CASES NOTIFIED AND CONFIRMED IN 1954

Under 5 years of age (Resident and non-resident)
Cases in Service Personnel and Families included

	0–1 year		1–2 years		2–3 years		3–4 years		4–5 years		Total under 5 years	Total over 5 years
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
Europeans	1	1	2	..	..	..	..	..	..	..	4	5
Eurasians	..	..	..	..	..	..	..	..	..	..	..	..
Chinese	13	5	11	10	3	2	1	2	1	1	49	9
Malays	1	1	2	1	1	..	..	..	..	..	6	..
Indians	..	..	..	2	..	..	1	..	..	..	3	..
Others	1	..	1	..	..	..	..	..	..	..	2	..
Total ..	16	7	16	13	4	2	2	2	1	1	64	14

Table 6

PERCENTAGE OF PARALYTIC AND NON-PARALYTIC POLIOMYELITIS CASES TREATED AT MIDDLETON HOSPITAL 1953 AND 1954

	1953	1954
Total cases treated at Middleton Hospital ..	41	70
Paralytic cases	40	70
Non-Paralytic cases	1	..
Paralytic cases	97.5%	100%

Table 7

NOTIFICATIONS OF TUBERCULOSIS (ALL TYPES) BY SEX AND AGE GROUPS 1954—(IN CITY RESIDENTS ONLY)

Sex	AGE GROUPS							
	0–5 years	5–10 years	10–15 years	15–20 years	20–45 years	Over 45 years	Age not stated	Total
Males	67	15	17	65	990	755	4	1,913
Females	63	19	21	29	328	206	1	667
Total ..	130	34	38	94	1,318	961	5	2,580

Table 8

INSTITUTIONS, ETC., WHENCE TUBERCULOSIS NOTIFICATIONS WERE RECEIVED

2,580 cases of Tuberculosis (all types) in City residents and 557 in non-residents that i 3,137 in all, were notified during the year. 38 of these were not ordinarily resident in th Colony.

Notified by	R.S.T.C.	T.T.S. Clinic	General Hospital	Total R.S.T.C. and Hospitals	Private Practi-tioners	Total
Number of cases notified	1,185	836	397	2,418	719	3,137

APPENDIX *B*

Table 1

GENERAL MEASURES TAKEN TO PREVENT IMPORTATION AND SPREAD OF INFECTIOUS DISEASES

PASSENGERS UNDER SURVEILLANCE DURING THE YEAR 1954

Number of Passenger Undertakings received ..	103
Number of Persons under surveillance	138
Number of Persons seen	135
Number of Persons not seen and could not be traced ..	3

Table 2

HOUSES QUARANTINED, DISINFECTED, AND INFECTIOUS CASES REMOVED TO INFECTIOUS HOSPITAL, TRAFALGAR HOSPITAL

Houses quarantined	..
Houses Disinfected	1,465
Infectious cases removed to Infectious Hospital ..	1,327
Leper cases removed Trafalgar Hospital ..	150

Table 3

VACCINATIONS BY CITY VACCINATORS, MEDICALMEN, PRIVATE AND GOVERNMENT VACCINATORS

1954

——	Successful	Modified	Failed	Not seen	Total
City Vaccinators	19,627	52	76	1,360	21,115
Medicalmen	11,652	..	15	6	11,673
Private and Government Vaccinators	589	..	..	..	589
Total ..	31,868	52	91	1,366	33,377

Table 4

VACCINATION BY RACES, 1954

Race	Under 6 months	6–12 months	1–5 years	Over 5 years	Total
Chinese	17,295	7,404	1,243	101	26,043
Malays	2,721	1,071	110	4	3,906
ndians	1,593	527	65	16	2,201
Eurasians	183	63	16	1	263
Europeans	53	24	2	1	80
Others	779	89	15	1	884
Total ..	22,624	9,178	1,451	124	33,377

APPENDIX *C*

Table 1

BIRTHS AND STILL BIRTHS

The following is the number of births for each month of the year, the 1953 figures being also shown:—

Month	1953	1954	Month	1953	1954
January	3,088	3,246	July	3,421	3,269
February	2,838	3,045	August	3,262	3,454
March	3,060	3,511	September	3,472	3,485
April	3,130	3,334	October	3,621	3,446
May	3,059	3,523	November	3,468	3,704
June	3,394	3,328	December	3,509	3,590
Total	18,569	19,987	Total	20,753	20,948

Table 2

The Births registered by races were:—

—	1953			1954		
	Males	Females	Total	Males	Females	Total
Europeans	137	139	276	149	156	305
Eurasians	193	163	356	139	157	296
Chinese	16,106	14,970	31,076	16,680	15,337	32,018*
Malays	2,098	1,964	4,062	2,317	2,149	4,466
Indians	1,728	1,659	3,387	1,757	1,711	3,468
Others	90	75	165	185	197	382
Total	20,352	18,970	39,322	21,227	19,707	40,935

* Include 1 Chinese of Unknown sex.

Table 3

The birth rate for each race in 1954 and the corresponding rate for 1953 are shown in the table which follows:—

—	1953	1954
Europeans	26.38	27.61
Eurasians	37.85	30.70
Chinese	49.80	49.52
Malays	47.51	50.40
Indians	54.38	53.23
Others	18.15	39.89
All Races Combined	49.11	49.28

Table 4

The table which follows, shows the number of live births by race and sex that occurred at the Government Maternity Hospital in 1954 and also the percentage of the total registered live-births of each race born at this hospital:—

—	1954			Percentage of total births registered by race born at the Govt. Hospital	
	Males	Females	Both Sexes	1954	1953
Chinese	8,529	7,752	16,281	50.85	46.78
Indians	1,174	1,125	2,299	66.29	63.24
Malays	189	159	348	7.79	5.86
Europeans	72	86	158	51.80	82.25
Eurasians	90	105	195	65.88	55.90
Others	20	16	36	9.42	21.82
Total All Races ..	10,074	9,243	19,317	47.19	44.20

Table 5

The percentage of the total births registered by races in the census years, 1911, 1921, 1931, 1947 and in 1948–1954 is shown in the table which follows:—

Year	Total Births	Chinese	Malays	Indians	Other Races	Percentage of Total Births			
						Chinese	Malays	Indians	Other Races
1911 ..	5,560	3,750	1,051	406	353	67.4	18.8	7.3	7.52
1921 ..	10,237	7,789	1,270	640	538	76.0	12.4	6.2	5.26
1931 ..	16,488	13,229	1,758	917	584	80.23	10.66	5.56	3.54
1936 ..	20,878	17,093	1,842	1,314	629	81.87	8.82	6.29	3.01
1947 ..	30,548	24,247	3,233	2,323	745	79.3	10.5	7.6	2.44
1948 ..	32,074	25,996	3,004	2,299	775	81.1	9.4	7.2	2.4
1949 ..	33,101	26,602	3,294	2,461	744	80.4	10.0	7.4	2.2
1950 ..	33,424	26,700	3,408	2,635	681	79.88	10.20	7.88	2.04
1951 ..	34,776	27,686	3,542	2,819	729	79.61	10.19	8.11	2.10
1952 ...	36,529	28,853	3,842	3,097	737	78.99	10.52	8.48	2.02
1953 ..	39,322	31,076	4,062	3,387	798	79.03	10.33	8.61	2.03
1954 ..	40,935	32,018	4,466	3,468	983	78.22	10.91	8.47	2.40

Table 6

The Still Births registered in 1954 and 1953 are shown in the table which follows:—

	1954			1953		
	Males	Females	Total	Males	Females	Total
Europeans	3	2	5	2	3	5
Eurasians	3	..	3	1	4	5
Chinese	368	309	677	278	224	502
Malays	83	65	148	70	51	121
Indians	78	55	133	47	55	102
Others	7	3	10	3	5	8
Total ..	542	434	976	401	342	743

APPENDIX *D*

Table 1

DEATHS

The following return shows the number of deaths and the death rate for each month of the year:—

Month	No. of Deaths	Death Rate	Month	No. of Deaths	Death Rate
January	740	10.50	July	619	8.78
February	696	10.93	August	723	10.26
March	747	10.60	September	724	10.61
April	675	9.89	October	697	9.89
May	691	9.80	November	698	10.23
June	667	9.78	December	697	9.89

Table 2

The chief causes of death in 1953 and 1954 and the rate per 1,000 living are set out in the table which follows:—

—	1953		1954	
	Cases	Rate per Mille	Cases	Rate per Mille
Bronchitis and Pneumonia	1,526	1.91	1,225	1.47
Tuberculosis	868	1.08	833	1.00
Diarrhoea and Enteritis	963	1.20	773	.93
Diseases of early Infancy	927	1.16	883	1.06
Infantile Convulsions (up to 5 years) ..	248	0.31	198	.24
Violence	464	0.58	478	.58
Heart Disease	489	0.61	546	.66
Old Age	308	0.38	304	.37
Cancer	519	0.65	521	.63
Nephritis	255	0.32	250	.30
Beri-Beri	164	0.21	73	.09
Diphtheria	56	0.07	39	.05
Malaria	33	0.04	22	.03
Dysenteries	43	0.05	44	.05
Typhoid	11	0.01	15	.02

Table 3

MORTALITY ACCORDING TO RACES AND AGES, 1954

Age Group	Europeans		Eurasians		Chinese		Malaysians		Indians and Pakistanis		Others		Total		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	U.
Under 1 day	1	1	2	1	125	82	32	12	13	5	1	4	174	105	1
1 day and under 2 days	..	..	..	..	65	45	7	4	7	8	..	1	79	58	..
2 days and under 3 days	..	..	..	..	30	23	7	5	5	6	..	..	42	34	..
3 days and under 4 days	..	..	..	..	26	22	7	9	14	3	1	..	48	34	..
4 days and under 5 days	..	..	..	1	24	19	3	3	8	3	1	1	36	27	..
5 days and under 6 days	..	..	..	..	28	18	7	4	5	5	..	..	40	27	..
6 days and under 7 days	1	..	..	..	16	12	4	1	1	1	1	..	23	14	..
7 days and under 14 days	1	1	..	..	94	79	16	12	11	13	..	..	122	105	..
14 days and under 21 days ..	1	..	..	1	78	70	10	7	9	9	1	..	99	87	..
21 days and under 28 days ..	..	..	..	..	35	33	3	7	5	5	..	1	43	46	..
Neo-Natal Deaths	4	2	2	3	521	403	96	64	78	58	5	7	706	537	1
28 days and under 2 months ..	..	..	..	1	99	51	31	26	11	10	1	1	142	89	..
2 months and under 3 months ..	1	..	..	..	68	67	29	17	12	7	..	..	110	91	..
3 months and under 4 months ..	..	..	1	..	43	37	32	15	6	6	1	1	83	59	..
4 months and under 5 months ..	..	..	..	..	26	25	17	14	5	6	..	..	48	45	..
5 months and under 6 months ..	..	..	..	1	37	26	14	12	2	2	..	1	53	42	..
6 months and under 7 months ..	..	..	1	..	28	22	14	8	3	1	2	3	48	34	..
7 months and under 8 months ..	..	1	..	..	27	30	12	14	2	3	..	1	41	49	..
8 months and under 9 months ..	..	..	..	1	32	25	14	11	1	3	..	1	47	41	..
9 months and under 10 months ..	..	..	..	1	31	21	8	9	2	..	1	..	42	31	..
10 months and under 11 months ..	..	1	..	..	16	13	6	14	1	1	..	..	23	29	..
11 months and under 1 year ..	..	..	..	..	8	24	8	8	2	1	..	..	18	33	..
Infant Mortality	5	4	4	7	936	744	281	212	125	98	10	15	1,361	1,080	1

* Includes neo-natal deaths.

Table 3—*continued*

MORTALITY ACCORDING TO RACES AND AGES, 1954—*continued*

Age Group	Europeans		Eurasians		Chinese		Malaysians		Indians and Pakistanis		Others		Total		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	U.
Under 1 year	5	4	4	7	936	744	281	212	125	98	10	15	1,361	1,080	1
1 year and under 2 years	..	..	1	..	165	164	53	31	16	12	..	1	235	208	..
2 years and under 3 years	..	..	2	..	75	87	18	19	9	6	..	..	104	112	..
3 years and under 4 years	..	..	..	..	55	54	4	5	6	3	..	..	65	62	..
4 years and under 5 years	..	..	..	..	43	36	6	2	1	8	..	..	50	46	..
5– 9 years	..	..	1	1	79	73	10	18	8	9	..	..	98	101	..
10–14 years	..	..	1	..	46	32	4	4	1	2	..	..	52	38	..
15–19 years	..	..	..	..	63	48	8	7	4	2	..	..	75	57	..
20–24 years	4	2	1	3	73	40	12	16	17	6	3	..	110	67	..
25–29 years	7	..	1	..	72	56	14	13	20	2	2	1	116	72	..
30–34 years	4	..	1	..	80	52	11	25	30	9	1	..	127	86	..
35–39 years	3	..	4	..	109	72	15	17	34	5	1	1	166	95	..
40–44 years	3	3	2	3	196	104	20	27	40	8	3	..	264	145	..
45–49 years	7	1	4	2	236	139	28	16	52	10	3	2	330	170	..
50–54 years	8	1	4	3	351	150	19	14	41	9	3	..	426	177	..
55–59 years	2	1	5	1	314	126	34	16	28	3	5	..	388	147	..
60–64 years	6	1	5	5	323	158	24	15	23	4	5	1	386	184	..
65–69 years	3	3	6	2	234	159	17	13	15	6	1	1	276	184	..
70–74 years	4	..	3	2	155	111	10	13	9	3	3	1	184	130	..
75–79 years	2	1	2	1	59	95	5	8	7	2	..	..	75	107	..
80–84 years	2	1	..	2	26	80	2	3	1	1	..	1	31	88	..
85 years and over	1	..	..	2	12	51	5	8	..	4	..	2	18	67	..
Unknown	..	..	..	..	2	1	..	..	..	..	3	2	5	3	5
Total ..	61	18	47	34	3,704	2,632	600	502	487	212	43	28	4,942	3,426	6

Table 4

INFANTILE MORTALITY BY RACES, 1938—1954

(Occupation Period 1942—1945 omitted)

Year	Europeans	Eurasians	Chinese	Malays	Indians	Others	All Races
1938	16.3	58.5	178.9	235.6	128.9	98.9	177.4
1939	39.4	79.6	150.3	188.4	91.6	96.9	147.7
1940	31.9	77.9	162.6	209.9	111.8	104.2	160.7
1941	21.6	48.6	152.5	211.6	102.8	143.6	152.4
1942—1945		(Japanese Occupation Period)					
1946	28.2	65.5	91.6	140.4	94.9	126.6	96.39
1947	52.0	84.3	93.4	144.1	81.8	109.9	97.6
1948	28.0	45.3	83.9	163.1	80.0	67.0	90.10
1949	19.3	38.7	74.3	122.7	82.1	109.5	79.18
1950	18.9	53.0	87.4	145.8	71.3	65.9	91.22
1951	21.7	41.1	73.7	130.4	68.5	158.2	78.79
1952	35.7	45.6	71.0	120.8	64.9	102.6	75.34
1953	21.7	64.6	66.7	116.7	63.8	127.3	71.54
1954	29.5	37.2	52.5	110.4	64.3	68.1	59.66

Table 5

The main causes of death in infants and the rate per 1,000 live births for each disease in 1954 and 1953 are set in the table which follows:—

	1954		1953	
—	Cases	Rate per Mille	Cases	Rate per Mille
Convulsions	147	3.59	179	4.55
Bronchitis and Pneumonia	477	11.65	639	16.25
Diseases of early Infancy	881	21.52	927	23.57
Diarrhoea and Enteritis	509	12.43	666	16.94
Tetanus	16	.39	20	0.51
Beri-Beri	8	.20	38	0.97
Congenital Syphilis	15	.37	26	0.66
Total	2,053	50.15	2,495	63.45

Table 6

1954 INFANTILE MORTALITY ACCORDING TO RACE, SEX AND AGE GROUPS

Race	Sex	AGE GROUP								
		0–1 Day	1–7 Days	1–4 Weeks	0–4 Weeks	4 Weeks– 3 Months	3–6 Months	6–9 Months	9–12 Months	0–12 Months
Europeans	M.	1	1	2	4	1	..	..	..	5
	F.	1	..	1	2	..	..	1	1	4
Eurasians	M.	2	..	..	2	..	1	1	..	4
	F.	1	1	1	3	1	1	1	1	7
Chinese	M.	125	189	207	521	167	106	87	55	936
	F.	82	139	182	403	118	88	77	58	744
Malays	M.	32	35	29	96	60	63	40	22	281
	F.	12	26	26	64	43	41	33	31	212
Indians	M.	13	40	25	78	23	13	6	5	125
	F.	5	26	27	58	17	14	7	2	98
Others	M.	1	3	1	5	1	1	2	1	10
	F.	4	2	1	7	1	2	5	..	15
Total Races ..	M.	174	268	264	706	252	184	136	83	1,361
	F.	105	194	238	537	180	146	124	93	1,080
Unknown	..	1	..	..	..	..	..	..	..	1
Combined Total ..		280	462	502	1,244	432	330	260	176	2,442

Table 7

NEO-NATAL RATES BY RACE AND SEX (1952–1954)

	1954			1953			1952		
	Males	Females	Both Sexes	Males	Females	Both Sexes	Males	Females	Both Sexes
Europeans	26.85	12.82	19.67	7.30	21.58	14.49	16.00	31.50	23.81
Eurasians	14.39	19.11	16.89	51.81	36.81	44.94	17.98	30.86	21.28
Chinese	31.24	26.28	28.86	39.55	34.26	37.01	34.57	36.31	35.42
Malays	41.43	29.78	35.83	39.56	34.11	36.93	44.99	37.55	41.38
Indians	44.39	33.90	39.22	35.30	31.34	33.36	40.84	31.06	36.16
Others	27.03	35.53	31.41	66.67	133.33	96.97	54.79	84.34	70.51
Total ..	33.26	27.25	30.39	39.21	34.32	36.85	36.02	36.09	36.05

Table 8

The chief causes of the neo-natal deaths in infants in 1954 and 1953 are shown in the table which follows:—

	1954		1953	
	No. of Cases	% Total Neo-natal deaths	No. of Cases	% Total Neo-natal deaths
1. Premature Birth	562	45.18	511	35.27
2. Congenital Debility	38	3.05	77	5.31
3. Infantile Convulsions	22	1.77	45	3.11
4. Atelectasis	131	10.53	95	6.56
5. Diarrhoea and Enteritis	115	9.24	210	14.49
6. Tetanus	16	1.29	19	1.31
7. Bronchitis and Pneumonia ..	97	7.80	170	11.73
8. Congenital Malformations ..	67	5.39	56	3.86
9. Icterus Neonatorum	49	4.00	134	9.25
10. Injury at Birth	51	4.10	62	4.28
11. Beri Beri	4	.32	8	.55
12. Undefined or unstated causes ..	10	.82	11	.76
13. Congenital Syphilis	8	.64	13	.90
14. Diseases of Umbilicus	3	.24	4	.28
15. Other Diseases of early Infancy ..	14	1.13	10	.69
16. Septicaemia and Pyaemia ..	..	..	2	.14
17. Other diseases	57	3.94	21	1.45
Total ..	1,244		1,449	

Table 9

CERTIFICATION OF DEATHS, 1954

By whom certified	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Medical Practitioners ..	36	59	4,459	431	437	43	5,464
City Council Inspecting Officers	..	7	1,126	614	129	4	1,880
Coroner	43	15	751	57	133	31	1,030
Total ..	79	81	6,336	1,102	699	77	8,374

Table 10

In the table which follows are shown the percentage number of deaths the causes o which were certified by Medical Practitioners, Inspecting Registrars and the Coroner, in the pre-war year 1941 and the post-war years 1946—1954:—

——	1941	1946	1947	1948	1949	1950	1951	1952	1953	1954
Medical Practitioners ..	68.9	57.16	58.48	60.22	59.81	58.89	59.82	63.30	66.63	65.25
Registrars ..	25.0	33.82	33.14	31.92	31.85	31.55	30.10	25.90	22.99	22.45
Coroner ..	6.1	9.02	8.39	7.86	8.34	9.56	10.08	10.80	10.38	12.30

APPENDIX *E*

Table 1

FOOD AND MARKETS

	1953 *Weight in katties*	1954 *Weight in katties*
A. Quantity of fresh fish landed and auctioned at the markets	9,234,335½	9,528,519
B. Quantities of unsound foodstuffs at markets which were seized, surrendered and destroyed during the year:—		
Fish, Meat, Vegetables, Fruits and Miscellaneous	235,925	245,016
Eggs	15,525	13,949
Head of Poultry	5,194	5,581

C. Samples taken for chemical analysis during the year = 780.

Decayed and unsound foodstuffs at Godown in the Harbour Board and elsewhere and shops in the City which were seized or surrendered and destroyed during the year included 18 crates, 49 cases, 13,040 tins, 510 bottles, 89 packages, 2,974½ lb. of assorted provisions, and 835 katties of fish, vegetables and fruits.

Table 2

D. Licences Issued and Fees Collected.

Year	LICENCES ISSUED			Total Fees
	Total	Food By-laws	Offensive Trades	$ c.
1953	2,135	1,730		77,936 00
			405	15,408 55
				93,344 55
954	2,196	1,779		80,168 00
			417	16,359 00
				96,527 00

Table 3

THE NUMBER OF ANIMALS SLAUGHTERED AT THE ABATTOIRS IN 1953 AND 1954

———	1953	1954
igs	327,853	318,575
heep	56,506	60,868
oats	2,022	2,237
xen	5,568	4,389
uffaloes	1,101	1,825
orses	11	13
Total ..	393,061	387,907

NUMBER OF PIGS FROM VARIOUS SOURCES SLAUGHTERED AT ABATTOIR AND APPROXIMATE WEIGHT OF PORK PRODUCED IN 1953 AND 1954

—	1954		1953	
	Number of pigs slaughtered	Approximate weight katties	Number of pigs slaughtered	Approximate weight katties
Local pigs—Average carcase weight, 55 katties	287,263	15,799,465	321,647	17,690,585
Federation pigs—Average carcase weight, 60 katties	29,245	1,754,700	835	50,100
Bali pigs—Average carcase weight, 90 katties	2,067	186,030	5,371	483,390
Total ..	318,575	17,740,195	327,853	18,224,075

CARCASES TOTALLY CONDEMNED AT THE ABATTOIRS 1954

Swine	*Sheep*	*Oxen*	*Buffaloes*	*Goats*	*Total Condemned*
25	109	44	2	1	181

Three of the carcases were condemned for Swine Fever.

REVENUE

The total revenue excluding rent received for use of chilling rooms from the Abattoirs in 1954 was $753,844.75. This is nearly $15,000 less than the previous year's revenue which was $768,680.50, and the highest ever recorded at the Abattoirs.

ANTI-MOSQUITO DEPARTMENT

INCIDENCE OF MALARIA

Seventy-one cases of malaria were reported from hospitals and dispensaries during the year. Of these fifty-one gave addresses within the City and were fully investigated. With the exception of two who gave wrong addresses, they were found to be imported cases or relapses.

TRAPPING OF ADULT MOSQUITOES

The three mosquito traps set up in various parts of the City for the collection of adult mosquitoes for identification continued to provide a valuable check on our control measures. For details see Appendix *A*.

LARVAE SEARCHING

5,583 collections of mosquito larvae were brought to the department by the field staff for identification. As in the past a close watch for the breeding of the malaria vector *A. sundaicus* was kept on all boats brought into the Singapore and Kallang Rivers for repairs. Evidence of such breeding was found in five disused boats and in all cases immediate action was taken.

At Appendix *B* is an analysis of 1,000 consecutive larval collections during the year showing the common breeding places within the City.

At Appendix *C* is shown the total number of collections in which vector species were found together with their common breeding places.

PERMANENT ANTI-MALARIAL WORKS

The areas under permanent control were extended by the construction of 676 yards of concrete anti-malarial drains and the laying of 448 yards of subsoil pipe lines. Apart from these 3,348 yards of worn out anti-malarial drains were re-constructed with new materials.

Details of permanent anti-malarial works are listed at Appendix *D*.

Minor repairs to existing permanent anti-malarial works were carried out as and when required and details of these are given in Appendix *E*.

PRAWN PONDS IN KALLANG BASIN

Weekly inspections continued to be carried out to ensure that sluice gates were opened and algal growths on ponds were removed. No breeding of *A. sundaicus* was found in this area during the year. Sluice gates were found to be closed on two occasions during ebb-tide and the owners were cautioned.

A move was initiated towards the end of the year by the Government Fisheries Department to license fish and prawn ponds in the City area. We welcomed this project provided we were given the opportunity of objecting where we considered there would be a danger and of making conditions to prevent this danger of breeding of malaria-carrying mosquitoes where necessary.

KAMPONG SANITATION

As in the previous year the existing Kampong Sanitation drains were regularly maintained by the Kampong Sanitation Labour Force. A small number of drains in connection with the drainage of standpipes were constructed. A new scheme to deal with the drainage of the Kampong at Whitley Park was commenced towards the end of the year.

For details of Kampong Sanitation Works see Appendix *F*

MAINTENANCE

Maintenance works carried out by ten gangs and four machine units was continued on the basis of all anti-malarial drains being maintained approximately once in forty-five days. Five patrol gangs continued to work around the General Hospital, Tan Tock Seng Hospital, Kallang Basin, Tanjong Rhu, Siglap, Katong and Geylang areas mainly to control the breeding of *A. sundaicus.*

169,014 yards of concrete drains and 23,623 yards of earth drains were regularly maintained. 11,303 large baskets of tins and other water bearing receptacles were collected and disposed of.

The question of the City Cleansing Department taking over several anti-malarial drains used mainly as sullage drains was dropped.

It was decided that these drains would be cleansed by contract labour at a cost of approximately $100,000 yearly. For this purpose tenders were called for towards the end of the year. It was hoped that the work would be started at the beginning of 1955. The supervision of this work would be carried out by the Anti-Mosquito Department.

LARVICIDAL WORKS

(i) *Anti-Malarial Mixture*—101,133 gallons of this containing 1 per cent D.D.T. were expended compared with 88,621 gallons last year. The excess used this year was mainly due to the increased number of building activities, such as Queenstown and Queens Dock projects; also persistent wet weather gave rise to more breeding places.

(ii) *Ditrene Dips and Shell Malariol Emulsion*—These larvicides were used for the control of breeding in places where an oily larvicide was undesirable. For the first quarter of the year Ditrene Dip (3 per cent solution) was used and then gradually it was replaced by Malariol Emulsion which was found to be effective and cheaper. 102 gallons of Ditrene Dip and 173 gallons of Malariol Emulsion were used.

(iii) *Malariol H.S.*—258 gallons of this were used to control mosquito breeding in fish and vegetable ponds in the Sungei Whampoe and Kallang Basin Areas.

(iv) *Gammexane*—393 lb. of this were used in the temporary control of nuisance mosquito breeding in septic tanks, which continued to be responsible for a number of mosquito complaints received.

(v) *Kerosene with* 5 *per cent D.D.T.*—Seventy-four gallons of this were used mainly for barrier spraying and occasionally as an anti-fly measure.

(vi) *Benzine with* 10 *per cent D.D.T.*—514 gallons were used to control mosquito breeding along the margins of reservoir.

(vii) *Dieldrex* 15—This was a commercial product containing 15 per cent of dieldrin in an aqueous emulsion and was introduced for use on an experimental basis in non-tidal areas. Early results indicated it as being a good culicine larvicide. A comprehensive report on its usefulness as a larvicide will be ready in 1955. Three gallons were used in 1954. The total cost of larvicides (including labour) was $158,075.76 and of this sum $12,957.65 was recovered from owners and contractors.

FILLING IN OF LOW-LYING AREAS

The filling of the extensive swamp at the Bendemeer Area by controlled tipping by the City Cleansing Department was continued. By this means breeding grounds for *A. sundaicus*, an important malaria vector were being reduced.

The proposed purchasing and reclaiming of a low lying private property, which is highly noted for the breeding of *A. sundaicus* at Kolam Ayer Lane could not be put into effect as the owner had objected to the amount awarded and had asked the matter to be referred to the court.

NOTICES

119 notices under the Destruction of Mosquitoes Ordinance were served during the year. The majority of these were served on building contractors.

ANTI-FLY MEASURES

In addition to the normal routine oiling, our oilers were called upon to carry out anti-fly measures on several occasions following numerous complaints from residential areas. The cause of the fly nuisance was found to be prawn dust, cow dung or other favourable breeding media used by squatters growing vegetables in adjoining areas.

TRAINING

The following Probationary Sanitary Inspectors Mr. Sonny Choo Chiang Cheng and Mr. Goon Peng Yam began a 3-month course in anti-malarial measures and in the bionomics and taxonorny of Malayan mosquitoes in November.

LAYOUT PLANS

369 plans were referred to this department by the Planning Officer, Singapore Improvement Trust, for comments regarding drainage. The sites were inspected and comments given.

STAFF

(i) In May 1954 Mr. J. R. Fernandez was transferred from the main Health Section and appointed as an Anti-Mosquito Inspector.

(ii) In October 1954 Dr. R. S. Corbitt went on study leave at the University of Malaya for the Diploma in Public Health Course.

(iii) Dr. Ling Ding Seng was placed in charge of the Department from the middle of September.

LABOUR

Authorised Labour Force	607
Average monthly strength in payroll ..	583
Percentage of shortage	3.95%
Number of working days for 1954 ..	313 days

Total man days based on monthly average labour on payroll	TOTAL NUMBER OF MAN DAYS LOST THROUGH						Percentage of actual man days worked
	Sick Leave	Per-centage	Annual Leave	Per-centage	Paid holidays	Per-centage	
182,479	6,029	3.3	1,749	.9	8,745	4.8	91.0

407 different labourers took sick leave on at least one occasion. This means that 69.8 per cent of the total labour force went sick at least once during the

year, but the total percentage of man days lost by the labour force on account of sickness is only 3.3 per cent which is considered to be a very satisfactory figure.

MISCELLANEOUS

(i) On Friday, 8th October, 1954, Dr. Metselaar of the Chief Malaria Division, New Guinea, Hollandia, visited several anti-malarial works in the City areas in the company of Assistant Health Officers Dr. R. S. Corbitt, and Dr. Ling Ding Seng, and the Superintendent (Anti-Mosquito Department). After the visit Dr. Metselaar said that he was very impressed by all that he had seen.

On the following day, 9th October, 1954, Dr. R. S. Corbitt took part in a broadcast on the importance of Malaria Control over the Blue Network of Radio Malaya.

(ii) The labour force of 621 went on strike for 12 days in July but essential larvicidal works and drain cleansing were carried out by a skeleton labour force supplied by the Government Labour Exchange and the monthly paid staff of the department.

(iii) Severe floods in December caused serious damage to anti-malarial works and it was not possible for the labour force to carry out their normal duties for four days. The cost of such damage is estimated to be approximately $25,500 which includes cost of labour and materials.

A close liaison was maintained with the Rural Health authorities and Army Departments concerned with the control of mosquito breeding.

SUMMARY OF WORKS AND COSTS FOR 1954

Particulars	Labour	MATERIALS			Total
		Mason	Machine	Larvicide	
	$ c.	$ c.	$ c.	$ c.	$ c.
Major Works including ⅓ cost of Store Labour ..	130,640 65	33,028 15	..	..	163,668, 80
Patrol Works including tidal gate labourers ..	117,846 66	..	..	..	117,846 66
MAINTENANCE					
1. Grass cutting, cleansing drains including hire and benzine	283,561 76	..	4,104 17	..	287,665 93
2. Larvicidal works, trappers oiling checkers and ⅓ cost of Store Labour ..	91,349 35	..	..	62,163 14	153,512 49
3. Repairs including ⅓ cost of Store Labour ..	50,998 75	29,539 84	..	..	80,538 59
4. A.M. Works during strike period (i.e. July) ..	2,896 50	..	..	1,666 77	4,563 27
	677,293 67	62,567 99	4,104 17	63,829 91	807,795 74
Less Kampong Sanitation labour during A.M. Works	7,672 36	..	..	..	7,672 36
	669,621 31	62,567 99	4,104 17	63,829 91	800,123 38
Cost of Haulage (including strike period) ..	..	..	..	..	22,299 34
Grand Total ..					822,422 72

LING DING SENG,
Assistant Health Officer,
for Deputy Health Officer.

APPENDIX *A*

Mosquito traps were set up in the following areas with the results indicated below:—

Locality	No. of Nights	*A. maculatus*	*A. sundaicus*	Other *Anopheles*	Others	Total
Goodman Road	201	Nil	Nil	20	4,793	4,813
Kolam Ayer Lane	201	Nil	Nil	42	7,167	7,209
St. Michaels Road	202	Nil	Nil	499	5,058	5,557
Kampong Wak Tanjong ..	65	Nil	Nil	22	1,178	1,200
Bendemeer Area	67	Nil	Nil	69	2,107	2,176
Kampong Potong Pasir ..	65	Nil	Nil	22	461	483
Tanjong Rhu Road ..	17	Nil	Nil	4	392	396
Kampong Martin	13	Nil	Nil	58	293	351
Boon Teck Road	16	Nil	Nil	4	233	237
	..	..	..	740	21,682	22,422

732 Anopheline female mosquitoes were trapped, of which 366 were dissected and none was found infected. In addition, 21,682 adult mosquitoes were identified.

APPENDIX *B*

1,000 consecutive collections from common breeding places:—

Sullage concrete drains	73
Roadside concrete drains	134
Concrete drains	58
Canal edges	2
Roadside earth drains	8
Earth drains	56
Stagnant Pools	184
New building excavations	95
Grassy Pools	36
Seepages	15
Lorry tracks	18
Cart track	1
Sewage excavations	6
Ponds	58
Concrete ponds	5
Concrete tanks	3
Concrete well	1
Earth wells	12
Septic Tanks	15
Concrete holes	6
Water Inspection Chambers	2
Sump pits	5
Concrete tub	1
Stop cock pits	2
Reservoir edges	2
Pig pond	1
Pig Sty	1
Sewage manhole tops	1
Boats	12
Tins	97
Drums	41
Jars	29
Disused tyres	15
Coconut shells	2
Spittoon	1
Wooden tub	1
Flower pot	1
Total ..	1,000

APPENDIX C

5,583 collections of mosquito larvae were brought to the laboratory for identification. Nineteen of these contained larvae of *Anopheline sundaicus*, twenty contained larvae of *Anopheline maculatus* and one contained larvae of *Anopheline letifer*. The other 5,543 collections did not contain larvae of malaria vectors.

2. The types of breeding places in which the larvae of malaria vectors were found were as follows:—

A. sundaicus	
New building excavation	1
Disused boats	5
Grassy pools	5
Stagnant pools	4
Concrete silt trap	1
Sullage concrete drain	1
Roadside concrete drain	1
Lorry tracks	1
	19

A. maculatus	
Earth Wells	10
Concrete well	1
Hillfoot seepages	2
Seepage pool	1
Roadside concrete drain	1
Earth drains (G.P.W.W.)	2
Swimming Pool (Mandai Quarry)	1
Choked subsoil line (Pontian)	1
Seepages (at Tebrau W. Works)	1
	20

A. letifer	
Wheel tracks beyond Sandstream (Pontian Water Works)	1

APPENDIX *D*

PERMANENT ANTI-MALARIAL WORKS CARRIED OUT DURING 1954

Anti-Malarial Area	MATERIALS USED													Labour Cost	Material Cost	Remarks
	Inverts					Slabs				Subsoil Pipes			Misc.			
	21″	18″	15″	12″	9″	18″	12″	15″	24″	8″	6″	4″				
														$ c.	$ c.	
7. Glencaird ..	..	..	..	435 (new) 40 (old)	..	950 (new)	..	..	..	..	..	..	..	3,406 44	1,864 45	Re-construction of the subsidiary drain (work completed).
10. Fern Hill ..	280 (new) 50 (old)	..	250 (new)	50 (new)	..	1,050 (new)	..	141 (new)	..	..	..	..	..	3,921 23	2,694 30	Re-construction of the main drain (work completed).
13. Stevens Road ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,030 40	..	Slopping and turfing of sides of the drain in connection with reconstruction (work completed).
20. Jervois Road Ravine No. 1 ..	425 (new)	..	200 (new)	237 (new)	..	1,648 (new)	..	..	..	..	30 (new)	10 (new)		9,576 81	3,899 86	Reconstruction of existing Anti-malaria Drain (work in progress).
38. Alexandra Swamp ..	210 (new)	..	..	30 (new)	..	1,090 (new)	..	..	..	..	..	..	..	6,596 10	2,186 05	Construction of the portion of the drain diverted to suit S.I.T. layout (work completed).
42. Grange Road ..	660 (new)	600 (new)	..	136 (new)	28 (old)	2,915 (new)	..	..	12 (old)	..	164 (new)	..	..	14,137 80	6,478 03	Reconstruction of Anti-malarial Drain (work completed).
63. Swiss Cottage No. 1 ..	320 (new)	..	..	227 (new) 20 (old)	..	1,209 (new)	..	..	..	..	..	..	..	9,370 23	2.367 55	Reconstruction of main drain and laying of slabs on either side of subsidiary drain (work in progress).
97. Wee Avenue ..	..	60 (new)	50 (old)	25 (new)	..	235 (new) 15 (old)	..	..	..	..	..	..	..	352 56	452 03	Reconstruction of Anti-malarial Drain (work completed).
103. Maxwell Road	..	..	..	..	..	..	..	..	..	..	313 (new) 22 (old)	..	..	1,823 20	238 09	Laying of subsoil pipe lines to trap seepages along the toe of the hill opposite Traffic Office (work completed).
107. Wayang Satu	..	..	..	192 (new) 117 (old)	..	1.130 (new)	40 (new)	..	15 (old)	..	..	..	..	11,847 02	2,305 63	Reconstruction of the subsidiary drains slooping turfing and desilting of the main drain were completed.

PERMANENT ANTI-MALARIAL WORKS CARRIED OUT DURING 1954—*continued*

Anti-Malarial Area	MATERIALS USED													Labour Cost	Material Cost	Remarks
	Inverts					Slabs				Subsoil Pipes			Misc.			
	21″	18″	15″	12″	9″	18″	12″	15″	24″	8″	6″	4″				
126. Temple Ravine	20 (new)	. .	. .	. .	. .	110 (new)	. .	. .	. .	. .	. .	. .	. .	2,631 07	265 93	Construction of the main drain in continuation of City Engineers drain work suspended, pending layout of this area.
127. Henderson Road (West) . .	200 (new)	. .	. .	15 (new)	. .	530 (new)	400 (new)	. .	. .	. .	. .	. .	. .	6,131 18	1,844 65	Realignment and construction of lower portion of the drain. Work completed.
135. Kim Kiat Ravine . .	. .	. .	157 (new) 50 (old)	35 (new)	. .	. .	. .	. .	. .	. .	10 (new)	. .	. .	11,658 35	2,307 30	Slabbing, sloping and turfing sides of existing subsidiary and main Anti-malarial Drains. Work in progress.
136. Boon Teck . .	. .	. .	. .	. .	. .	. .	. .	. .	23 (old)	. .	. .	. .	. .	3,098 14	59 50	Slabbing, sloping and turfing sides of existing subsidiary drain. Work in progress.
138. Ah Hood Road	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3,519 14	. .	Desilting, resloping and turfing of Anti-malarial Drain. Completed.
146. Mohamedan Cemetery . .	56 (old)	140 (new)	188 (old)	10 (new)	. .	760 (new) 7 (old)	. .	. .	. .	. .	. .	. .	. .	2,090 55	1,321 10	Reconstruction of major concrete drain. Completed.
165. Burn Road . .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	3,221 25	. .	A new earth drain was excavated along the southern side of Burn Road to provide an adequate outlet for the drainage of the ravine. Completed.
174. Chasseriau Estate . .	. .	270 (new)	. .	50 (new)	. . . .	480 (new) 278 (old)	. .	. .	. .	. .	1,199 (new) 207 (old)	207 (new)	. .	20,765 54	2,322 81	Reconstruction of the main drain with slabs on either side. Laying of subsoil pipe lines, sloping and turfing the sides of drain. Work completed.
183. Namely Avenue	. .	. .	. .	475 (new)	40 (new) 24 (old)	. .	. .	. .	. .	. .	892 (new)	. .	. .	9,359 18	1,746 70	Construction of major drain was continued. Subsoil pipe lines were laid to trap out-cropping seepages. Work completed.

APPENDIX *E*

DETAILS OF REPAIRS CARRIED OUT TO THE EXISTING ANTI-MALARIAL WORKS

Anti-Malarial Areas	MATERIALS USED																						Labour Cost	Material Cost
	INVERTS										SLABS						SUB-SOIL PIPES							
	21″		18″		15″		12″		9″		18″		15″		12″		8″		6″		4″			
	*N	*R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R		
2. Barker Road Ravine	..	..	..	..	..	..	20	..	..	..	20	..	..	..	..	..	..	..	..	..	..	..	52 60	66 72
4. Claymore Ravine	..	..	130	..	..	..	65	..	..	..	210	176	10	..	..	..	..	..	..	..	..	..	922 32	664 76
5. Cluny Ravine	130	..	80	..	20	..	10	..	20	..	245	380	..	..	..	..	..	..	210	70	..	29	2,207 51	1,044 14
7. Glencaird	..	..	..	..	..	..	120	..	70	..	10	30	..	..	..	..	..	..	..	..	..	..	296 68	243 59
9. Nassim and Dalvey Ravines	90	..	..	..	..	..	115	..	..	..	100	90	75	225	..	..	3	..	10	..	..	..	585 86	620 50
12. Scotts Road Railway	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	78	80	200	252	..	..	1,090 61	187 94
15. Woodleigh	..	..	50	..	..	..	..	..	..	..	76	80	..	..	..	..	..	..	..	..	..	..	221 80	214 70
19. S.H.B. Ravine	15	3	8	..	..	..	2	5	..	..	6	26	..	..	..	..	4	45	..	10	..	10	160 74	73 44
25. Morse Ravine	..	..	12	..	35	..	..	..	..	..	55	55	..	..	..	..	..	..	..	..	..	..	237 15	191 42
27. One Tree Hill	50	..	..	..	..	..	..	..	..	..	50	..	..	..	..	..	..	..	..	..	..	..	68 42	206 11
28. Orchard Road No. 1	130	..	20	..	..	..	..	..	..	..	180	216	..	..	..	..	..	..	..	..	..	..	607 85	469 86
32. Radin Mas	130	..	65	..	..	..	113	..	35	126	430	630	..	..	..	..	..	..	..	..	..	..	1,328 69	1,330 14
35. Tiong Bahru	15	20	..	..	..	..	10	10	10	..	..	..	..	..	..	..	..	..	..	..	..	..	851 67	445 44
36. Wishart	30	20	70	10	..	..	..	..	..	..	85	25	..	..	..	..	..	..	..	..	..	..	334 72	359 53
39. Balestier Plain	..	..	..	..	..	..	10	..	..	..	20	60	..	..	..	..	..	..	..	..	..	..	76 40	55 92
41. Gallop Road	10	..	..	..	..	..	10	..	..	..	20	40	..	..	..	..	..	..	..	..	..	..	40 20	72 48
57. Bukit Brown	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	500	60	..	..	..	1,113 68	50 05
58. Kampong Java	..	..	..	..	8	..	..	..	..	..	..	195	..	..	..	..	..	..	..	..	..	..	278 14	62 30
59. Moulmein Road	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	55 00	8 80
63. Swiss Cottage No. 1	320	..	..	..	..	..	..	..	..	..	575	491	..	..	..	..	3	..	7	..	..	..	2,266 98	1,691 98
71. Tanglin Post Office	60	68	..	..	..	..	10	..	..	..	450	281	..	..	..	..	..	..	..	..	..	..	1,714 42	908 11
73. Mandalay Road	..	..	..	..	..	..	..	..	2	..	3	..	..	..	..	..	..	..	..	..	..	..	15 04	14 55
79. Serangoon Village	35	..	..	..	10	..	..	..	10	25	100	370	..	..	..	..	..	..	..	..	..	..	500 29	367 98
81. Mount Rosie	2	..	70	20	66	..	65	42	30	18	295	620	..	..	..	..	..	..	..	..	..	..	1,038 64	610 56
91. Holland/Bukit Timah Road	340	..	15	..	..	..	45	..	..	..	885	629	..	..	..	..	..	..	10	..	..	..	2,945 58	2,255 60
94. Bushy Park	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	6	..	..	115 98	31 80
97. Wee Avenue	..	..	..	..	280	..	..	..	..	..	300	150	..	..	..	..	..	..	..	..	..	..	385 95	834 20
100. Adam Park	..	..	31	..	50	..	10	..	..	..	145	390	..	..	..	..	..	..	14	..	..	..	746 56	427 33
101. McPherson Road	5	..	..	..	..	..	15	..	..	..	45	305	20	..	..	..	..	..	..	..	..	..	797 93	159 06
104. Katong	..	..	..	..	..	..	70	200	..	..	80	..	..	120	..	..	..	..	..	..	..	..	271 08	175 41
105. Bukit Permai	..	..	5	5	..	..	46	..	..	..	125	151	..	..	..	..	..	..	..	..	..	..	517 98	277 37
107. Wayang Satu	80	..	210	..	..	..	..	..	23	..	245	1,870	..	..	..	..	..	..	9	..	..	..	841 48	557 61
109. Mount Pleasant	36	..	60	..	..	..	20	30	..	..	181	347	..	..	..	..	..	..	320	..	..	..	1,493 67	803 63

* N = new R = relaid.

DETAILS OF REPAIRS CARRIED OUT TO THE EXISTING ANTI-MALARIAL WORKS—*continued*

Anti-Malarial Areas	MATERIALS USED																										Labour Cost	Material Cost
	INVERTS										SLABS						SUB-SOIL PIPES							
	21″		18″		15″		12″		9″		18″		15″		12″		8″		6″		4″			
	•N	•R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R	N	R		
110. MacRitchie Reservoir ..	10	..	..	..	..	..	..	..	..	..	25	76	..	..	..	..	..	..	..	..	..	..	218 64	65 73
115. Alexandra Road Ravine ..	350	41	..	..	..	..	60	12	..	..	545	280	..	..	..	..	..	..	15	..	..	..	1,732 77	1,765 73
116. Sungei Whampoa	8	40	..	85	..	..	..	50	2	..	10	..	..	..	..	..	..	..	..	..	..	..	..189 26	118 72
117. Telok Blangah Road	140	..	20	..	5	..	30	..	..	..	120	80	..	..	..	..	..	..	..	..	10	..	731 34	740 04
118. Kallang Reservoir	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	59 52	26 98
120. Kim Seng Road	..	..	..	..	5	..	..	..	..	..	25	..	..	..	..	..	..	..	..	..	40	..	209 29	99 53
121. Alexandra Brick Factory Ravine ..	65	20	..	..	..	..	5	15	..	..	100	45	..	..	..	..	..	..	..	..	..	..	136 84	330 81
124. Alexandra Road Cemetery Ravine	70	63	120	50	..	..	..	..	..	..	265	340	..	..	..	..	..	..	..	..	..	..	774 53	835 13
125. Alexandra Road/Faber Ridge Ravine	20	20	..	..	..	..	..	..	..	..	50	50	..	..	..	..	..	..	..	..	..	..	65 17	136 06
126. Alexandra Road Temple Ravine ..	..	..	..	..	..	..	..	..	..	..	65	..	..	..	..	55	..	..	..	..	..	..	132 19	65 05
127. Alexandra Road West Ravine ..	..	..	..	..	..	..	3	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	45 90	18 08
130. Mount Washington Ravine ..	85	..	30	53	30	..	25	4	18	5	..	25	..	26	25	30	490	410	..	..	..	..	2,035 08	1,213 18
133. Kallang Basin	..	..	..	..	..	200	95	1950	..	..	208	568	20	100	..	..	..	..	..	..	..	..	1,696 25	525 86
135. Kim Keat Road Ravine ..	..	..	..	46	..	..	45	35	10	20	55	400	..	..	..	..	..	..	..	..	..	..	321 59	221 81
136. Boon Teck Road Ravine ..	..	..	25	85	25	159	75	155	..	..	110	540	10	..	..	..	..	..	..	..	..	..	830 30	533 30
138. Ah Hood Road Ravine ..	..	..	30	25	15	35	30	55	..	..	25	105	..	..	..	..	..	..	..	..	..	..	373 73	127 00
140. Playfair Road Ravine ..	10	..	..	..	15	..	20	..	..	76	265	1,075	..	..	..	..	..	..	..	..	..	..	2,135 33	604 89
142. Thomson Road Ravine 2 ..	..	..	20	54	..	..	25	55	..	..	..	..	15	..	..	..	25	95	..	..	..	..	156 71	119 92
145. Hindoo Cemetery Ravine 2 ..	..	..	15	..	..	..	..	..	..	..	20	130	..	..	..	..	..	..	..	..	..	..	94 08	73 27
146. Mohammedan Cemetery Ravine ..	..	..	15	..	..	..	..	..	..	..	20	45	..	..	..	..	..	..	3	..	..	..	81 54	65 02
147. Woodsdale Ravine	..	..	..	..	30	..	..	..	..	..	20	..	..	..	..	..	..	..	3	..	..	..	90 68	87 81
151. Hokien Cemetery 1	..	..	25	70	..	..	20	..	..	..	80	320	..	..	..	..	..	..	..	..	..	..	377 22	225 17
153. St. Michaels Road	..	20	..	..	..	..	..	..	..	..	10	35	..	..	10	..	..	..	..	..	..	..	62 72	33 49
154. Thomson Road Ravine 4 ..	..	..	..	..	..	..	5	45	25	35	20	125	..	..	..	..	..	..	..	..	..	..	118 16	79 77
160. Kampong Martin	..	..	48	..	35	..	6	..	..	..	200	30	..	..	..	..	..	..	..	..	..	..	359 33	426 06
164. Woodsville	..	..	..	..	..	..	115	150	..	..	15	..	..	..	..	..	..	..	..	..	..	..	234 61	183 64
174. Chasseriau Estate	..	..	20	..	..	..	..	..	..	..	50	300	..	..	..	..	..	..	..	..	..	..	234 28	149 38

•N = new R = relaid.

KAMPONG SANITATION

Kampong	MATERIALS USED											Labour Cost	Material Cost	Remarks	Distribution of Maintenance Gang
	Inverts					Slabs		Subsoil Pipes			Misc.				
	21″	18″	15″	12″	9″	18″	15″	8″	6″	4″					
NORTH															
Kampong Geylang Serai ..	..	..	..	100 (old) 40 (new)	..	..	..	..	..	..	..	16,768 38	65 10	General Maintenance and repair	18 labourers and 1 mandore.
Kampong Amber ..	..	..	..	..	..	..	..	..	..	..	..	2,926 86	..	General Maintenance	
Kampong Wak Tanjong ..	..	..	..	..	..	8 (new)	..	..	..	..	..	23 19	49 16		
Junction Jalan Afifi and Paya Lebar	..	..	..	..	..	8 (old)	..	..	..	..	..	38 55	74 18	New drainage provided for standpipes	do.
Beng Guan Road ..	..	..	..	..	..	5 (old)	..	..	..	..	..	24 42	27 56		
Kampong Potong Pasir ..	..	..	..	16 (new)	..	10 (old)	..	..	..	..	..	102 55	79 72		
Lorong 23 Geylang ..	..	..	..	..	..	..	..	..	..	..	..	8 60	9 74		
SOUTH															
Kampong Silat	..	..	..	55 (new)	40 (new)	35 (new)	..	..	..	..	..	14,600 61	227 99	General Maintenance	11 labourers
Kampong Silat (S.I.T.) ..	..	..	..	..	..	..	..	..	..	..	..	1,183 00	..	do.	1 labourer
Kampong Mt. Washington ..	..	..	..	10 (new)	10 (new)	10 (new)	..	..	..	..	..	2,440 81	56 67	do.	2 labourers
Kampong Alexandra ..	..	..	..	20 (new)	15 (new)	..	15 (new)	..	..	..	..	3,624 79	..	do.	1 labourer
Kampong Bukit Permai ..	..	..	..	..	..	..	..	..	..	..	..	1,153 00	..	do.	3 labourers plus 1 mandore
Cemetery Ravine Area No. 124	..	..	..	85 (new)	..	40 (new)	..	..	..	..	..	152 50	197 71	New drainage provided for standpipes	do.
Fern Hill Area No. 10 ..	..	..	35 (new)	..	..	30 (new)	..	..	..	..	..	126 14	171 68		

CHEMICAL LABORATORY

THE TOTAL number of samples received and analysed during the year amounted to 24,941, which is some seventeen hundred more than the number received in 1953.

The samples were submitted by all departments of the City Council and include a number of samples submitted by commercial firms.

The samples can be classified according to their source of origin as follows:–

Water Department	14,786
Sewerage Department	3,683
Health Department	840
Gas Department	135
Electricity Department	209
Architects Department	2,066
Engineers Department	1
Stores and Workshops	27
Fire Brigade Department	5
Veterinary Department	3
City Cleansing Department	11
Commercial Firms	3,175
Total	24,941

A general indication of the nature of these samples and of the consultative and advisory duties carried out for the various departments of the Council is given below.

The details of samples received from the City Council Departments were as follows:—

WATER DEPARTMENT

Water Supply	13,534
Water from Taps, Mains, etc.	444
Filter Black Deposit	1
Filtrate (F. No. 2 Bt. Timah)	1
Sodium Bicarbonate	2
Indicators, Chemicals Solutions, etc.	180
Bulbs	200
G.I. Pipe (Bend) Deposits	7
Well Water	4
Tebrau River Intake	1
Galvanized Screw Nut	1
Sodium Hypochlorite	1
Sludge	1
Bottom Sand	1
Bleaching Powder	1
Fuel Oil	3
Sediment	3
Boiler Water	281
Sulphate of Alumina	8
Larva	1
Sodium Silicate	5
Clear Water Tanks	48
Meter Deposit	1
Water Meter Components	5
Mains Deposit	1
Galvanized Pipes (B.S.S. Dip test)	36
Lead	1
Aluminium	1
Clensol (I.C.I.)	2
Sterilizing Tablets	1
Snails	1
Chloride of Lime	4
Sodium Haxametaphosphate	5

Further developments, on the investigational work and works trials carried out in 1952 and 1953, were made. The outbreak of a labour strike in July compelled the Water Department to adopt the use of Sodium Hexametaphosphate at Woodleigh and of pre-filtration liming at Bukit Timah on a full works scale during the strike period. These methods of treatment were highly successful and achieved considerably longer filter runs, about ten times as long at Bukit Timah and three times at Woodleigh, as those normally obtained, thus enabling these works to provide a high quality hygienic water, with negligible labour available.

Since then, the pre-filtration liming treatment has been permanently adopted at Bukit Timah and partially, limited somewhat by present Works design, at Tebrau. Plans and arrangements for alkali activated silica treatment are now in process of completion at Tebrau and it is hoped to commence this form of treatment early in the new year. A temporary shortage of Hexametaphosphate limited use of this chemical at Woodleigh but arrival of a new shipment will enable permanent treatment to be adopted at Woodleigh.

On the whole the now established close liaison between the laboratory and the Water Department bore considerable fruit and the overall result of the adoption of these new methods of chemical treatment has already resulted in quite remarkable savings in current expenditure and must, also, result in future savings on capital expenditure for the Water Department.

The ranges and averages of daily analysis of the various raw and treated waters are shown in Tables *A* and *B* attached. Table *C* gives monthly complete analysis of water from the clear water tanks. The satisfactory quality of the City Supply is maintained.

SEWERAGE DEPARTMENT

The following samples were analysed:—

Routine sewage, sludge, top-water and effluent	2,759
Special sewage	243
Special sludge	5
Septic Tank effluent	445
River Water	81
Sewer water	119
Subsoil water	5
Other waters	6
Soil	1
Asbestos ring	1
Naylor Spiralarim Lamps	11
Scale on concrete piping	1
5 per cent Copper Sulphate solution ..	6
Total ..	3,683

Purification System

The purification system remains unchanged with two main works, that at Alexandra Road relying on extension filter beds while the Kim Chuan Road works make use of more compact activated sludge units. In addition, nightsoil from unsewered areas of the City are collected at three depots and pumped to Serangoon for further treatment. The effluent from the Alexandra Road works go into the Alexandra Road stream while that from the Kim Chuan Road works flow into Serangoon River. The good quality of both effluents have been maintained throughout the year and the average analysis for the year is given below, expressed in parts per 100,000.

——	INTO ALEXANDRA ROAD STREAM		INTO SERANGOON RIVER	
	Range	Average	Range	Average
Free and Saline Ammonia ..	0.64/1.28	1.02	0.80/3.20	2.10
Albuminoid Ammonia ..	0.08/0.32	0.24	0.20/0.80	0.39
Oxygen absorbed in 4 hours ..	0.57/1.75	1.10	1.20/4.25	2.30
Bio-chemical oxygen demand ..	0.94/5.30	1.90	1.65/10.60	4.40
Total Solids	25.0/348.8	86.8	37.6/125.8	64.1
Suspended Solids	0.3/7.6	2.1	0.7/8.1	3.0
Nitrates (as N2)	abs./0.5	0.2	abs./0.1	abs.
Chlorides (as C1)	5/128	29	8/46	18
pH Value	7.1/7.8	7.4	7.3/7.9	7.6

Both effluents show some improvement over those for 1953.

River Water

Analyses were done on samples of river water taken from various points of the Singapore River and Serangoon River to determine the degree of pollution and the concentration of tidal water.

Effluents from small Installations

Effluents from septic tanks continue to be received in increasing numbers, and although varying widely in analytical results, are generally of fairly good quality. The average qualities and ranges (in parts per 100,000) on the samples examined are as follows:—

	Range	*Average*
Free ammonia	0.08/8.0	1.75
Albuminoid Ammonia	0.04/1.2	0.30
Oxygen absorbed from Permanganate	0.08/16.1	1.37
Suspended Solids	0.4/12.2	2.2
Chlorides	0.8/68.0	2.9
Nitrates	abs./2.8	0.2

Special experiments were carried out at the request of the Sewage Consultant to determine the usefulness or otherwise of the pre-aeration unit as used in the Kim Chuan Road sewage works.

Protracted series of tests carried out over a total period of six months were done on five samples of sludges to study their behaviour when digested under anærobic conditions.

Eleven safety lamps, which should show a warning light in an explosive atmosphere, were tested and only one lamp was found to work at 5 per cent coal gas concentration.

A large number of samples taken from sewers were tested to determine the extent of infiltration of sea-water.

HEALTH DEPARTMENT

The usual variety of samples taken in connection with Public Health administration were received. The bulk of the samples were those of food and drugs which were submitted for one or more of the following purposes:—

(*a*) to determine the purity and quality of the article;
(*b*) to determine the freedom, or otherwise, from metallic contamination or harmful preservatives;
(*c*) to assess the fitness for consumption.

In addition well-waters were examined in connection with the installation of standpipes and the closures of polluted wells. The varied nature of the samples is shown by the following lists:

For Purity and Quality (377 samples)

Gingelly oil, groundnut oil, mustard oil, ghee, butter, coconut oil, cooking oils and cooking fats.

Fresh milk, canned sterilized milk, sweetened condensed milk, skimmed milk powder, buttermilk powder, infants food, dried full-cream milk, malted milk.

Pepper powder, pepper mixture, coffee powder, coffee mixture, roasted pearl barley, roasted soya bean.

Rice Vinegar, artificial vinegar, honey, egg-jam, durian jam, whisky, rum, brandy, desiccated coconut, prawn paste, shrimp, sauce, food flavouring powders.

Aureomycin suppositories, citronella oil, eucalyptus oil, cinnamon oil, glycerine, olive oil, vitamin B1 tablets, white draught purgative mixtures, worm oil, castor oil, potassium citrate and bromide.

For Metallic Contamination, saccharin and preservatives (334 samples)

Soda water (from fountains and aerated water factories), aerated waters, non-carbonated drinks, syrups, fruit juices and cordials, materials used in soft drink manufacture, glucose, sugar, colouring matter flavouring.

Sweets, popsicles, ice-cream, moulds, metal pot, steel drum, metal sheet, solder, paraffin wax, drinking straw.

Locally canned food, canned food of Chinese origin, chilly sauce, iron tonic, soya bean sauce, sweetened almond powder, evaporated milk, tea, Chinese medicines.

For Fitness for consumption (26 samples)

"Creamy" milk, eggs, confectionery, tomato ketchup, assorted canned food.

Other samples (103)

Well water, furnace effluent, anti-malarial oil.

Adulteration of edible fats and oils with mineral oil was detected only in two samples of gingelly oil of Hong Kong origin. A sample of mustard seed oil had 40 per cent coconut oil. Tests made on some twenty samples of oil used for frying banana fritters (goreng pisang) showed that the oils were invariably coconut oil, containing no mineral oil.

Milk taken from vendors were tested regularly throughout the year. Out of 154 samples examined 30 were found to be below standard, which is some 19.5 per cent of the samples submitted. A sample of buttermilk powder was analysed and was classified as skimmed milk powder, Several samples of proprietory infants' food were analysed to see if they contained exclusively skimmed milk powder, Without exception, all were fortified by added carbohydrates, protein, and vitamins.

Several foods of local manufacture including egg jam and prawn paste were analysed to establish their composition. Four samples of desiccated coconut were examined and found to be below the declared weight.

The usual assortment of drugs were received and analysed. Several brands of sweet purgative mixtures were found to be sodium sulphate sweetened with saccharin, but the recommended doses were, in general, excessively high. Three samples of worm oil were found to contain oil of chenopodium in excess of the B.P. doses.

Soda water from both fountains and aerated water factories were tested regularly for lead and copper contents and were in general, satisfactory. Soft drinks, which include aerated waters and non-carbonated drinks, were also tested for these metals as well as for saccharin.

Lead was found in several samples of sweets of local manufacture and a considerable amount of work was done in testing the confectionery as well as the equipment used at various stages of production. In several cases lead was traced to the metal moulds and in others to the use of crudely constructed utensils having soldered seams.

Eighteen samples of evaporated milk were received and the containers reported on. Eleven cans were found to contain no solder in their construction and were considered satisfactory; seven containers mostly of Dutch manufacture had solder covering vent-holes, resulting in lead solder being exposed internally in the can.

The occurrence of lead in Chinese medicines has been reported on from time to time but this year fresh interest was kindled in Chinese drugs following several cases of lead poisoning in which a red powder, known locally as "Choo Sa" or "Sng Sa", was known to have been taken. This powder, actually mercuric sulphide, is a widely used drug in the Chinese pharmacopœia, and is often compounded with other drugs in convulsion, fever powders, etc. The adulteration of this powder with red lead accounts for the presence of lead in these Chinese medicinal powders.

Well waters examined during the year were taken mainly from the following areas: Kampong Duchess, Braddell Road, Bartley Road and Kampong Kuchai.

An interesting case of atmospheric pollution was investigated at a local iron foundry in Kampong Bahru Road. Red fumes emanating from a chimney stack some 50 feet high were collected and found to contain iron oxide and oxides of nitrogen, but considering the large dilution that the effluent would undergo on dispersing it was felt that the effluent would not be hazardous.

The total number of formal samples received under the Food and Drugs Ordinance was 292, of which 70 were found to be adulterated, below standard, or otherwise irregular, and certificates were issued for these samples.

The proportion of unsatisfactory samples is 24.0 per cent of the number submitted and details of the adulteration and other irregularities found are given in Table *D*.

GAS DEPARTMENT

The following samples were received for analysis:—

Coal	57
Dehydrated tar	14
Boiler water	58
Boiler scale	1
Coke	1
Oxide	2
White deposit from gas-water	1
Water from gas-holder	1
Total	135

The use of a proprietary tannin extract in the treatment of boiler water at the Gas Works has for some time been found to be unsatisfactory because the peculiar construction of the boiler plant requires large amounts of make-up water with consequent rapid concentration of hardness. A sample of scale taken from a boiler was examined and found to be essentially calcium silicate. The Gas Engineer was accordingly advised to change over to phosphate treatment, which was done on 16th October, 1954 on a boiler already steaming for thirty-three days on the vegetable tannin treatment. Good conditions were maintained in the boiler and the Gas Engineer has since reported that, when the boiler was taken down for cleaning after two months treatment with phosphate, scale originally present had practically disappeared.

A white deposit taken from a gas-meter was examined and found to consist of cyanides and thiocyanates of copper and zinc, which apparently had arisen from the interaction of cyanogen compounds of coal gas with the brass components of the gas-meter.

Tests done on a sample of water drawn from a gas-holder showed it to contain a large amount of alkalinity, which was responsible for the corrosive action on the paint work of the gas-holder.

ELECTRICITY DEPARTMENT

The following samples were received for analysis:—

Fuel Oil	11
Boiler Water	189
Treated Water	1
Dissolved Oxygen Test	3
Other Waters	2
Identification of Substances	2
Green Deposit	1
Total	209

A green deposit on a porcelain insulator was identified as an algal growth.

The analysis of routine boiler water samples were carried out by a member of this laboratory staff at the Power Station pending the arrival of the new power station Chemist.

ARCHITECT'S DEPARTMENT

The following samples were received for analysis:—

Pool water (Mount Emily)	873
Pool water (Yan Kit)	1,156
Aquarium water	32
Stones and White Deposit	2
Reinforced Concrete	2
"Snowcem"	1
Total	2,066

Pool waters taken from the two swimming pools run by the City Council were tested daily. The high quality of the water in regard to clarity and dissipation of pollution was maintained throughout the year.

The City Architect's new undertaking, the Van Kleef Aquarium, ran into teething trouble in August. Fish in the fresh water tanks did not thrive, and an analysis of the water traced the trouble to the high alkalinity of the water with a pH of about 9.6. In October some difficulty was experienced with the salt water tanks and, initially, coral yielding hydrogen sulphide was found to be the cause of the serious losses. Trouble is, however, still being experienced and a special advisory committee has been set up to administer the aquarium. This laboratory continues to carry out investigations and analyses, on request.

CITY STORES AND WORKSHOPS

The following samples were examined:—

Boiler Water	8
Boiler Scales	2
Gas	10
Soap	2
Sand	1
Cement	4
Total	27

The boiler water and boiler scale samples analysed were in connection with steam-raising plants in the Abbatoir and elsewhere.

Ten samples from nightsoil pumping stations were tested specifically for methane which was not found in any sample. The other samples were examined to see if they comply with specifications.

FIRE BRIGADE DEPARTMENT

One sample of safety film, two samples of shellac and one sample of "Duco" paint were received for classification.

A cylindrical object found at the scene of a fire was found to contain a large amount of red phosphorus.

CITY CLEANSING DEPARTMENT

Eleven samples of refuse were analysed for moisture content and calorific value.

CITY VETERINARY DEPARTMENT

Three specimens of dog viscera were examined for poisonous substances administered.

Strychrine and brucine was found in one sample. The other two samples were found to contain alkali in the form of carbonate, administer probably as caustic soda.

CITY ENGINEER'S DEPARTMENT

One lot of absorbent paper was impregnated with lead acetate for use as a test for hydrogen sulphide.

COMMERCIAL FIRMS

A total of 3,175 samples were received and reported on, which is 187 more than in 1953. The income ($42,899) derived from these samples during 1954 was the highest to date.

The samples may be classified as follows:—

Essential Oils	9
Vegetable Oils	543
Ores	35
Metals and Alloys	15
Food	628
Chemicals	89
Local Products	1,426
Damaged Goods	66
Miscellaneous	364
Total	3,175

The range of samples is given in the following lists:

Essential Oils

Patchouli, Canaga.

Vegetable Oils

Palm, Coconut, Groundnut, Gingelly, Illipenut, Castor, Palm Oil Sludge.

Ores

Bauxite, Wolfram, Tin-tailings, Lead ore, Iron ore, Copper ore.

Metals and Alloys

Tin, Refined Tin, Gum Metal, White Metal.

Food

Ice-cream Mix, Reconstituted Milk, Fresh Milk, Skimmed Milk Powder, Sweetened Condensed Milk, Evaporated Milk, Rice, Sago Flour, Tapioca Flour, Pearl Tapioca, Tapioca Refuse, Rolled Oats, Rye, Soya Beans, Sauce, "Blachan", Salted Eggs, Anchovies, Sardines, Ghee, Cheese, Tinned Carrots, Corned Beef, Cauliflower, Frying Chicken, Canned Pineapple, Sweet Drinks, Honey, Sugar.

Chemicals

Carbon Dioxide, Sodium Arsenite, Calcium Carbonate, Sodium Phosphate, Formic Acid, Pyridine, Glycerine, Liquid Paraffin, Thiourea, Monosodium Glutamate, Saccharin, Camphorated Oil, Pharmaceutical Preparations, Tonic mixture, Chinese Medicines, Preparation of solutions.

Local Products

Jelutong, Katiaw, Latex, Rubber, Copra, Copra Cake, Soap, Soap curd, Black pepper, Patchouli leaves, Derris root, Gum Benjamin, Gum Damar, Damar Batu, Illipe Nut Cake, Illipe Nut Butter.

Damaged Goods

Paper bag, Gunny Bag, Stained Hessian, Cardboard Packing, Paper Wrapping, Brown Paper, Stained label, Felt packing, Tin plate, Food Cover, Galvanized sheet, Aluminium corrugated roofings, Rubber, Metal fittings, Angle and flat bars, Picture Frame Mouldings, Cement, Lubricating oil, Aluminium foils, Steel bars, Cotton, Biscuits, Coffee seeds, Dried Chillies, Pears, Canned Food, Abalone, Copra cake and sacking, Rice and sacking, Sugar and sacking, Dried sea grass, Mosquito coils, Gum Damar.

Miscellaneous

Cement, Concrete slab, Concrete, Mortar, Sand, Fireclay, Firebrick, Tiles, Coal, Fuel Oil, Mineral Oil, Wood Oil, Anti-malarial Oil, Creosote, Raw water from springs, rivers and wells, Sea-water, Distilled water, Swimming Pool water, Sewage, Sewage effluent, Brine, Tobacco leaves, Yeasts, Salt, Tallow, Beef Dripping, Fish Meal, Sea-weed, Fertilizers, Piecegoods, Artificial Leather, Blankets, Uniforms, Tanning materials, Talcum powder, Empty tins, Paint, Copper tube, Condenser tube, Plates, Pewter tankard, Suspension and Electrolyte of Battery, Deposits, Unknown substance.

COMMITTEES

The City Analyst on official nomination served on the following committees:—

1. Corrosion and Tropicalisation Committee of the Pan-Malayan Scientific Advisory Council.
2. Advisory Committee on Fluoridation.
3. Food and Drugs Committee.

STAFF

The writer went on home leave on 30th March and resumed duty on 9th July. In his absence, Dr. M. Jamieson, Supernumerary Analyst, acted as City Analyst. Dr. M. Jamieson left the department on 14th July to take up an appointment with the Government of Singapore. I have pleasure in recording his very valuable contribution to the work of the Department during the past three and a half years.

Lectures to the junior staff as part of their training scheme were given regularly by the Senior Staff.

ACCOMMODATION

Throughout the year work was carried out in the laboratory under the same over-crowded conditions. Plans for extending the laboratory in the 4th Floor of the City Hall have now been approved and it is expected that the extension will be completed before the end of the year (1955). Although not providing all the accommodation required, this will greatly alleviate the present condition.

The work and scope of the laboratory continued to expand and it is my pleasure to record my thanks to all members of the staff for their co-operation during a very difficult year.

T. A. SPILLANE,
M.SC., A.R.I.C., F.I.C.I.,
City Analyst.

TABLE *A*

RESERVOIR WATER

AVERAGES OF DAILY ANALYSIS FOR YEAR 1954

Parts per million	PONTIAN		PULAI		MACRITCHIE		PEIRCE		TEBRAU	
	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Nitrites	a	a/trace	a	..	a	..	a	..	a	a/t
Carbon Dioxide	2.8	1.2/10.5	5.2	1.2/13.5	1.6	0.8/4.2	1.8	0.8/4.1	3.7	1.4/7.0
Alkalinity (as CaCO3)	4.5	1.5/7.0	4.6	3.0/12.0	2.0	0.7/4.0	1.8	0.5/5.0	2.2	1.0/8.0
pH Value	6.5	5.9/7.1	6.3	5.9/7.5	6.2	5.8/6.4	6.0	5.7/6.9	6.0	5.5/6.9
Iron	.45	.10/.70	.59	.30/2.0	.36	.20/.80	.45	.20/.90	.30	.05/.80
Colour (Hazen Units)	22	14/35	34	14/150	24	15/55	24	16/40	46	10/180

TABLE *B*

PURIFIED WATERS

AVERAGES OF DAILY ANALYSIS FOR YEAR 1954

Parts per million	PULAI		BUKIT TIMAH		WOODLEIGH		TEBRAU	
	CLEAR WATER TANK		CLEAR WATER TANK		CLEAR WATER TANK		CLEAR WATER TANK	
	Average	Range	Average	Range	Average	Range	Average	Range
Nitrites	a	..	a	a/trace	t	a/trace	a	..
Carbon Dioxide	a	a/1.4	.02	a/0.7	0.08	a/4.8	.20	a/2.50
Alkalinity (as CaCO3)	11.1	7.0/18.0	10.1	6.0/15.0	16.0	8.0/23.0	10.9	4.0/39.0
pH Value	8.7	7.2/9.4	8.5	7.4/9.2	8.8	6.4/9.6	8.5	6.7/9.6
Free Chlorine	.61	.03/1.00	.19	.02/60	.41	.04/1.05	.61	.05/1.20
Soluble Aluminium	..	..	1.12	a/2.40	..	..	.45	a/2.40
Iron	.44	.20/.89	.19	.10/.50	.32	.10/.80	.06	.05/.20
Colour (Hazen Units)	20	12/38	12	5/32	12	5/30	5	5/20

TABLE *C*

CLEAR WATER TANKS

AVERAGES OF MONTHLY COMPLETE ANALYSIS 1954

Parts per million		PULAI		BUKIT TIMAH		WOODLEIGH		TEBRAU	
		CLEAR WATER TANK		PULAI MAIN		CLEAR WATER TANK		PULAI MAIN	
		Average	Range	Average	Range	Average	Range	Average	Range
Free Ammonia		.13	.06/.18	.16	.08/.32	.23	.12/.36	.14	.08/.32
Alb. Ammonia		.05	.02/.08	.05	.02/.10	.05	.02/.10	.03	.02/.06
Nitrites		a	..	a	a/t	t	a/t	a	..
Nitrates		.013	a/.03	a	..	.01	a/.06	.016	a/.09
Carbon Dioxide		a	..	a	..	a	..	a	a/0.5
Alkalinity (as CaC03)		11.0	10/13.0	10.5	7.0/13.0	16.3	14.0/19.0	10.2	9.0/11.0
Free Chlorine		.63	.50/.75	.19	.05/.35	.43	.25/.80	.45	.25/.65
Iron		.44	.30/.60	.20	.10/.40	.38	.10/.80	.07	.05/.15
Soluble Aluminium		..	..	1.21	a/2.20	..	..	.41	.10/.60
Chlorides		5.6	5.0/7.0	5.8	5/6.5	5.9	5/7	5.4	5/6
pH		8.8	8.6/9.1	8.7	8.3/9.0	8.8	8.4/9.0	8.5	7.4/8.9
Oxygen absorbed in 4 hours		.56	.23/.90	.57	.26/.80	.52	.20/.75	.23	.07/.35
	Temporary	11.1	10.0/13.0	10.6	7.0/13.0	16.5	14.0/19.0	10.4	9.0/12.0
Hardness	Permanent	1.8	0.5/5.0	11.7	3.0/18.0	4.3	1.5/8.5	14.6	12.5/19.0
	Total	12.9	11.0/16.0	22.3	11.0/28.0	20.8	15.5/26.0	25.0	22.5/29.0
	Organic	20.0	16.4/34.0	22.9	11.0/35.6	19.1	10.0/32.8	14.9	7.0/31.0
Solids	Inorganic	22.9	14.4/46.0	35.0	22.8/57.0	22.5	11.6/47.0	31.9	20.8/54.0
	Total	42.9	30.8/66.0	57.9	38.5/81.0	41.6	28.8/64.0	46.8	34.8/85.0
Colour (Hazen Units)		19	15/23	14	5/25	14	5/24	5	5/5
B.O.E. in 5 days		.68	.33/1.35	.77	.27/1.53	.90	.40/1.87	.23	.13/.40

TABLE *D*

FOODS AND DRUGS SAMPLES ADULTERATED OR OTHERWISE IRREGULAR

Number	Sample	Nature of Irregularity
25	Milk	Deficient in solids-not-fat.
5	Milk	Deficient in fat.
14	Coffee Mixtures	Deficient in coffee content.
1	Chinese Drug ("Choo San")	Contained 14.2 per cent lead.
6	Chinese Drug ("Yim Seah Sun")	Contained 2.4 per cent, 3.2 per cent, 3.3 per cent, 3.4 per cent, 3.8 per cent and 4.1 per cent lead.
2	Chinese Drug ("Pai Pau Chin Foong Sun") ..	Contained 0.5 per cent and 1.5 per cent lead.
1	Chinese Drug ("Keng Foong Sun")	Contained 2.45 per cent lead.
1	Chinese Drug ("Poh Yin Pills")	Contained 250 p.p.m. lead.
1	Compound of Vegetable Oil and Butter	Contained not more than 2 per cent butter.
1	Ghee	Contained no ghee.
1	Mustard Oil	Contained 40 per cent coconut oil.
2	Gingelly Oil	Contained 50 per cent and 51 per cent of mineral oil.
2	Canned Dessiccated Coconut	Deficient in net weight.
2	Soya Bean Sauce	Contained saccharin.
1	Barley Syrup	Contained saccharin.
1	Pepper	Contained rice starch and not more than 46 per cent pepper.
1	Skimmed Milk Powder	Contained no innocuous soluble colouring matter other than yellow.
1	Eucalyptus Oil	Not eucalyptus oil of B.P.
1	Citronella Oil	Contained 68 per cent mineral oil.
1	Cinnamon Oil	Not cinnamon oil but clove oil.
70		

BACTERIOLOGICAL LABORATORY

RETURN OF WORK DONE DURING 1954

I HAVE the honour to submit the following report on the work of the Bacteriological Laboratory during the year 1954.

	Year 1953	*Year* 1954
A. Public Health Specimens	35,132	39,499
B. Water—1. Routine	13,258	13,429
2. Mount Emily and Yan Kit Swimming Pools	2,368	2,487
3. Miscellaneous	338	290
4. Algae and Others	165	147
C. Sewerage—Wash Water	38	40
Grand Total	51,299	55,892

The figure for the year 1954 is again the highest on record.

A.—PUBLIC HEALTH SPECIMENS

City Health Office	11,565
Infant Welfare Clinics	4,829
Middleton Hospital	8,929
St. Andrew's Mission Hospital	5
Kwong Wai Siu Free Hospital	13
Johore Water Works Dispensary	103
Medical Practitioners	5,150
Rats from Plague Prevention Unit	5,716
Ecto-parasites from Plague Prevention Unit	3,189
Grand Total	39,499

MALARIA

Species	Positive	Negative	Total
P. falciparum	5	..	5
P. vivax	8	..	8
Others	..	..	..
Total negatives	..	2,772	2,772
Grand Total	13	2,772	2,785
Source			
Medical Practitioners	3	471	474
City Health Office	4	2,240	2,244
Johore Water Works Dispensary	6	61	67
Grand Total	13	2,772	2,785

TUBERCULOSIS

Specimen	Positive	Negative	Total
Sputum	45	2,003	2,048
Faeces	..	1	1
Urine	..	2	2
Pus	2	9	11
Cerebro-spinal fluid	..	2	2
Animal glands	4	7	11
Milk	..	57	57
Grand Total ..	51	2,081	2,132

ENTERIC FEVER

——	Positive	Negative	Total
Blood for Widal Reaction:			
Agglutination with Salmonella Typhi ..	108	398	506
Agglutination with Salmonella paratyphi *A* ..	2	319	321
Agglutination with Salmonella paratyphi *B* ..	2	319	321
Agglutination with Salmonella paratyphi *C* ..	1	320	321
Blood clot culture—Salmonella Typhi isolated ..	48	284	332
Faeces for culture—Salmonella Typhi isolated ..	30	1,146	1,176
Urine for culture—Salmonella Typhi isolated ..	2	1,139	1,141
Totals ..	193	3,925	4,118
Agglutination with Vi I antigen	..	..	531
Grand Total ..	..	..	4,649

TROPICAL TYPHUS

Blood for Weil Felix Reaction:—

Number of sera positive for B. proteus OXK ..	1
Number of sera positive for B. proteus OX19 ..	2
Number of sera investigated	502

DYSENTERY

——	Positive	Negative	Total
Faeces examination for Amoebae:—			
E. histolytica	69	..	69
E. coli	8	..	8
Negative	..	1,624	1,624
Total ..	77	1,624	1,701
Faeces culture for Bacillary:—			
Shigella Flexner	30	..	30
Shigella Sonnei	14	.	14
Negative	..	679	679
Total ..	44	679	723
Grand Total ..	121	2,303	2,424

PLAGUE

No human specimens were received.

5,716 rats were dissected and none showed any signs of plague infection.

3,189 ecto-parasites were examined.

The species and distribution of all the rats and ecto-parasites that were examined are given in the following table:—

Source	R.		R.		R.		R.			Totals			
	Norvigicus		Rattus		Concolor		Musculus		Cro-ci-dura	Fleas	Mites	Rats	Preg-nant
	M.	F.	M.	F.	M.	F.	M.	F.					
1. City Area ..	1,066	1,922	292	265	428	403	130	57	53	2,321	91	4,616	127
2. S'pore Harbour	29	54	92	159	19	19	..	2	..	339	31	374	17
3. Health Officer (Port) ..	8	12	78	95	17	13	10	11	1	..	..	245	16
4. Health Officer (Rural) ..	14	29	53	70	93	116	43	61	2	351	56	481	25
	1,117	2,017	515	589	557	551	183	131	56	3,011	178	5,716	185
	3,134		1,104		1.108		314						
Total Pregnant ..		113		34		30		8					185

A total of 381 dead rats were received from the following sources:—

(1) City Area	130
(2) Health Officer (Port)	245
(3) Health Officer (Rural)	6
Total ..	381

Fleas:—Of the 3,011 fleas caught and examined, 2 were identified as *C. felix* and the rest were *X. cheopis*.

The flea index in the Town area was 0.5.

MENINGOCOCCAL MENINGITIS

Three specimens of cerebro-spinal fluid were examined, one of which was positive for meningococcus.

LEPROSY

Skin smears—Positive	12
Negative	57
Total number examined ..	69

DIPHTHERIA

Throat swabs—Positive	765
Negative	6,034
Total number examined ..	6,799

MISCELLANEOUS EXAMINATIONS

——	Positive	Negative	Total
Urine for General Examination	..	..	3,697
Pathological exudates	..	..	32
Pus for Genococci	32	484	516
Urine for Gonococci	..	29	29
Blood for Total and Differential all counts	..	..	611
Blood for Haemoglogin estimation	..	..	6
Blood for culture	..	..	1
Blood for Kahn test	176	1,383	1,559
Blood for Filaria	..	19	19
Blood for E.S.R.	..	..	15
Faeces for Occult Blood	1	3	4
Faeces for ova of Intestinal Parasites	5,943	4,890	10,833
Sundried Humus	..	..	128
Non-carbonated drinks	..	..	2
Milk and Milk Products	..	..	241
Smear for Fungi	..	..	2
Disinfectant	..	..	6
Milk bottles for Sterility tests	..	..	47
Miscellaneous specimens	..	..	4
	..	..	17,752

B.—WATER

Thirteen thousand four hundred and twenty-nine (13,429) routine samples of water from the City Water Engineer were tested Bacteriologically.

Throughout the year, the condition of the tap water remained satisfactory.

Results of examination on the various samples are summarised in the following table:—

Source	Year's average total colonies per m.l. at 37° C. in 24 hours	Year's average presumptive coliform count per 100 m.l. in 24 hours
MacRitchie Reservoir, Valve Tower	494	32
Peirce Reservoir, Valve Tower	298	7
Seletar Reservoir, Suction Well	209	9
Pontian Reservoir, Valve Tower	507	68
Bukit Timah Reservoir, Clear Water Tank	42	Less than 1
Woodleigh Reservoir, Clear Water Tank	47	Less than 1
Gunong Pulai Reservoir, Clear Water Tank	24	Less than 1
Pontian Reservoir, Camp Supply	38	Less than 1
Pearl's Hill Service Reservoir, Tank No. 1	35	Less than 1
Pearl's Hill Service Reservoir, Tank No. 2	36	Less than 1
Pearl's Hill Service Reservoir, Air Valve	24	Less than 1
Fort Canning Reservoir	90	Nil
Tebrau Reservoir, Clear Water Tank	41	1
Taps—Bacteriological laboratory	73	Less than 1
Lorong Lalat Office	75	Less than 1
Joo Chiat Office	73	Less than 1
Havelock Road Office	56	Less than 1
Pasir Panjang Office	36	Nil
Dunearn Road Office	24	Nil
Average of six taps	56	Less than 1

Source	Year's average total colonies per m.l. at 37° C. in 24 hours	Year's average presumptive coliform counts per 100 m.l. in 24 hours
Mount Emily Swimming Pool:—		
Shallow End	15	Less than 1
Centre Deep	15	Less than 1
Filter Outlet	24	Less than 1
Yen Kit Swimming Pool:—		
Shallow End	15	Nil
Practice Pool (Deep End)	21	Nil
Main Pool (Inlet)	16	Less than 1
Main Pool (Outlet)	22	Less than 1

Results of City Council Swimming Pools were satisfactory throughout the year.

For the past three years, an experiment was done to determine the presence of late lactose fermenting organisms in the filtered waters. Tests were carried out on routine samples from Service Reservoirs and controlled taps which after twenty-four hours' incubation at 37°C., were further incubated for another twenty-four hours. Readings for presumptive coliform counts per 100 ml. were taken after twenty-four hours' and fourty-eight hours' incubation.

Out of 6,837 samples examined, only 284 samples which were negative in twenty-four hours, were found positive at fourty-eight hours' incubation and differentiation of the coliform organisms isolated proved to be as follows:—

Coliform Group	Percentage (100%)	Probable Habitat
	%	
B. coli Type II	8	Doubtful; probably not primarily intestinal.
Intermediate Type I	24	Mainly soil.
Intermediate Type II	6	Mainly soil.
B. aerogenes Type I	36	Mainly vegetation.
B. aerogenes Type II	10	Mainly vegetation.
Irregular Type II	14	Doubtful.
B. cloacae	2	Mainly vegetation.

The results indicate the presence of late lactose fermenting organisms in only 4.1 per cent water samples, and that these organisms are not typical faecal bacteria.

C.—SEWERAGE

Forty (40) samples of wash water from the City Cleansing Department were examined and were found to be satisfactory.

NG SEE YOOK, L.M.S. (S'pore), D.P.H. (Lond.),
City Bacteriologist.

MATERNAL AND INFANT WELFARE DEPARTMENT

	1954	1953
I. *Total Number of Confinements in City Area*	41,153	39,668
Nature of Confinements:—		
In Hospital	19,692	17,692
By Private Doctors	3,999	3,269
By Private Midwives	14,793	15,879
By City Council Midwives	1,426	1,364
With no skilled attention	1,253 (3.04%)	1,464 (3.7%)
Of these confinements:—		
Mothers visited by District Sisters within ten days after confinement	21,340	21,834
Subsequent visits to sick mothers	2,199	2,018
Sick Mothers treated in their homes by L.A.H. Os	3,229	2,639
Maternal deaths in puerperium	15	17
Mothers removed and untraced	92	137
Total Number of Births in City Area	41,468	40,002
Of which Number of Twins were	306	326
Number of Triplets	3	4
Quadruplets	1	..
Neonatal Deaths	1,258	1,449
Still-births	755	743
Number of newborn babies seen by District Sisters	21,036	20,416
Babies born in Hospital	19,244	17,241
Babies untraced	112	153
II. *Free Midwifery Services from the Clinics*		
(*a*) Free confinements conducted by ten City Council Midwives	1,426	1,364
(*b*) Number of cases referred from K. K. Hospital for post natal follow-ups by City Council Midwives	2,862	3,233
(*c*) Number of self attended deliveries followed up by City Council Midwives	118	181
(*d*) Abnormal cases sent to K. K. Hospital	16	14
(*e*) Total visits paid by City Council Midwives to patient's homes	16,092	16,767
III. *Visits paid by Health Visitors to homes*	92,695	89,194
1st visits following Birth Report	30,924	30,225
Subsequent visits	61,771	58,969
Percentage of Total Births visited by Health Visitors	75.12%	76.19%
IV. *Clinic Activities*		
A. INFANTS:—		
New Infants 1st attendances at Clinics	22,383	19,625
Subsequent attendances of Infants at Clinics	118,175	103,316
Total attendances	140,558	122,941
Of these, attendances of sick babies were	84,586	79,184
i.e.	60.17%	64.4%
B. TODDLERS CONSULTATIONS		
1st visits	4,379	6,380
Subsequent visits	3,425	5,302
Total visits	7,804	11,682

C. SICK MOTHERS

	1954	1953
Number of sick mothers treated:—		
In Clinics	11,672	7,274
On District	3,229	2,639
	14,901	9,913

D. ANTE NATAL CONSULTATIONS IN CLINICS

	1954	1953
(*a*) Antenatal mothers 1st attendances	3,643	2,895
(*b*) Subsequent attendances	9,336	7,380
Total	12,979	10,275
Antenatal Home visiting by Health Visitors	5,616	4,138
Kahn Blood Tests taken	133	192
Number positive	19	20

E. FAMILY PLANNING

	1954		1953	
Number of new cases advised	633		468	
Revisits: Number coming to check appliances	775	1,161	310	1,204
Revisits: Old cases	386		894	
Unsuitable cases and failures	18		15	
Cases referred to F.P.A. Clinics or K.K. Hospital	366		353	
	2,178		2,040	

F. IMMUNISATION AGAINST DIPHTHERIA

	1954	1953
(*a*) *Under one year old*		
1st injections	11,888	6,859
2nd injections (Number who completed the course)	10,616	6,049
Total injections	22,504	12,908
(*b*) *Over one year old*		
1st injections	29,175	3,753
2nd injections (Number who completed the course)	25,762	3,623
Total injections	54,937	7,376
Visits to homes to follow up cases	5,805	3,757
Febrile reactions	1,577	449
(*c*) *Contact Cases*		
1st injections	1,970	416
2nd injections	1,890	286
Total	3,860	702

G. IMMUNISATION AGAINST DIPHTHERIA AND WHOOPING COUGH

	1954	1953
1st injections	181	176
2nd injections	163	120
3rd injections (Number who completed the course)	175	100
Total injections	519	396
Febrile reactions	..	21

	1954	1953
H. FREE MILK POWDER DISTRIBUTION		
Total number of new babies given free Milk	1,553	1,788
Number of nursing mothers given free Milk	255	175
Number of re-issues	28,855	24,339
Amount given to Salvation Army	672	632
Amount given to Convent Orphanage	1,200	1,130
Total Number of lb. of Powdered Milk used	26,000	24,000
V. SUPERVISION OF MIDWIVES IN PRIVATE PRACTICE BY SUPERVISOR OF MIDWIVES		
(*a*) Number of inspections of Private Midwives' bage in three Clinics	2,136	2,058
(*b*) District Visits to check on Private Midwive's work	1,447	1,291
(*c*) Investigation of puerperal Fever reported	52	43
(*d*) Investigation of Tetanus Neonatorum reported	8	5
VI. *Medical Examinations of City Council Female Staff*		
(*a*) For fitness to join service, confirmation and to join Provident Fund	136	—
(*b*) For treatment of ailments	145	—
	281	

COMMENTARY

The number of births continued to increase last year with an accompanying increase in nearly all branches of the Maternity and Infant Welfare Department activities. The same number of staff somehow managed to put in a little extra each year, when each year it appeared that they had reached saturation point.

More and more mothers are being confined in Kandang Kerbau Hospital and by Private Doctors, and this fact is reflected in the slight drop in—

(1) the number of mothers visited by the District Sisters in the puerperium (by less than 500) as, in our past experience, the 1st Class Hospital cases and Private Doctor's cases usually decline our attentions. However there was an increase in the number of subsequent visits by Health Sisters to sick mothers in the puerperium (by over 180) and more sick mothers (590 more than in the previous year) were seen and treated by the Lady A. H. Os in the patient's homes in the puerperium.

(2) the number of cases which had been delivered in Kandang Kerbau Hospital and discharged after three days, and followed up in their homes by City Council Midwives. During the year Kandang Kerbau Hospital instituted a follow-up service of their own, selected normal cases being sent home about twenty-four hours after delivery. While City Council Midwives still continue to co-operate with them, their domiciliary service is welcome in that pressure of cases on our Midwives is lessened and permits us to pay more attention to the cases that we delivered ourselves, instead of hectically scrambling from one case to another in order to complete the numbers in our daily rounds. However our Midwives delivered sixty-two more cases this year than the previous year although we were short of two Midwives at different times through maternity leave and sick leaves for surgical reasons.

The number of self attended cases without skilled aid continued to drop, but unfortunately there were eight cases of tetanus neonatorum among them. As in the previous year, whereas there was an actual increase in the number of visits to babies up to one year by Health Visitors the percentage of total births visited was even less, the reason being the same as last year i.e. the same number of staff trying to cope with increasing number of cases to be visited in the same number of working hours.

Clinic facilities were in greater demand than ever. Increasing numbers of mothers with problems of infant management come to seek advice, but there was also a large proportion who only attended if and when their babies were ill, as they have yet to get used to the idea of preventive medicine and health education. Only minor ailments were treated at the clinics, the majority of cases being respiratory infections and gastro-intestinal affections due to wrong feeding and infection. The Lady Assistant Health Officers and Health Visitors were particularly interested in the welfare of the premature babies who attended clinics regularly, and although in many cases it was most gratifying to see many thriving under our care, the neonatal death reports still cited prematurity as one of the major causes.

During the year there was an intensive campaign to boost Anti-Diphtheria inoculations, which produced a fair response. Over 10,000 infants under one year completed the course, although nearly 12,000 came for the initial injection. This still fell short of the desired target of 75 per cent of infant population, which is necessary, before it can be hoped to stamp out the disease. The response from older children was more encouraging (25,762) although here again about 4,000 failed to complete the course.

As more and more female clinical staff are being taken on by the City Council, there was an increase in routine medical examinations for fitness to be undertaken by the Senior Assistant Health Officer. There was also an increase in the number of female clerks treated in the clinics for various ailments.

A departmental exam for Health Visitors was held in August, the first of its kind. This was primarily for the Health Visitors who were at the $300 bar, but four of the Health Sisters and many fairly junior also attempted it. All twelve who sat for the examination passed, four with distinction. The paper was set and a viva given following a course of lectures given the previous year. The Health Visitors have also been attending a series of lectures given by a W.H.O. Sister Tutor at Kandang Kerbau Hospital who also gave a refresher course of lectures to Midwives, Private and City Council.

MAGGIE LIM,
Senior Assistant Health Officer,
City Maternity and Infant Welfare Dept.

MIDDLETON HOSPITAL

Table 1 below shows the number of admissions, discharges, Deaths, etc. during the year, 1954

Table 1

Diseases	Remaining from 1953	Admitted	Dis-charged	Died	Remaining
Smallpox	..	..	..	..	..
Cholera	..	..	..	..	..
Plague	..	..	..	..	..
Chickenpox	16	1,313	1,303	..	26
Measles	3	182	172	8	5
Rubella	..	1	1	..	..
Diphtheria	24	345	315	34	20
Diphtheria Carrier ..	3	121	119	..	5
Meningococcal Meningitis ..	..	2	2	..	..
Acute Anterior Poliomyelitis ..	34	70	71	2	31
T.B. Meningitis	..	1	..	1	..
Typhoid Fever	6	125	113	4	14
Tropical Typhus	..	7	7	..	..
Amœbic Dysentery ..	4	122	118	2	6
Bacillary Dysentery ..	..	18	18	..	..
Clinical Dysentery ..	..	34	33	1	..
Mumps	..	35	34	..	1
Whooping Cough ..	..	10	10	..	..
Erysipelas	..	3	3	..	..
Acute Encephalitis ..	..	3	..	3	..
Typhoid Carrier Observation ..	..	196	196	..	..
Observation	2	134	132	..	4
Other diseases	8	192	195	3	2
Total ..	100	2,914	2,842	58	114

DANGEROUS INFECTIOUS DISEASES

There were no cases of Smallpox, Cholora or Plague.

TYPHOID FEVER

125 cases of Typhoid Fever were admitted during the year and with 6 cases remaining on the 31st December, 1953, a total of 131 cases were treated. 4 cases died, a case mortality rate of 3 per cent. During 1953, there were 91 cases admitted with 2 deaths.

A slight increase in the number of admissions occured, in July and August when a total of 39 cases were admitted of which 20 cases were from the Tanjong Pagar area alone. The rest of the cases were from different parts of the City. A careful investigation by the City Health Department to trace the source of infection in the Tanjong Pagar Area was not successful.

A total of 196 employees from various Ice Cream manufacturing firms were investigated for Typhoid Carriers with negative results.

Table II below shows the number of admissions and deaths by month.

Table 2

——	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Cases ..	5	8	11	4	4	7	19	20	13	10	10	14	125
Died ..	1	..	..	..	..	..	1	1	1	..	..	..	4

DIPHTHERIA

345 cases of Diphtheria were admitted during the year, and with 24 cases remaining from the previous year, a total of 369 cases were treated. Of these 369 cases, 34 died a case mortality rate of 9.2 per cent. 18 cases died within 24 hours after admission. Tracheotomy operation was performed on 85 cases (24.6 per cent), of which 20 cases died, a mortality rate of 23.5 per cent.

All the cases of diphtheria have no histroy of previous immunisation. 66 cases were from the rural area. Besides the above clinical cases, 121 contact diphtheria carriers with positive throat swab for C. diphtheria were also admitted for isolation and treatment.

In spite of the intensive propaganda by the City and Government Health Authorities for a mass inoculation campaign against diphtheria of the child population in the year, the number of admissions with the disease have not been reduced.

Table 3

DIPHTHERIA

TYPE OF CASES

Type of Cases	Admission	Deaths
Laryngeal and Tracheal	114	23
Naso-pharyngeal	80	4
Faucial and Tonsillar	127	7
Nasal	22	..
Cutaneous	2	..
Total ..	345	34

Table 4

ADMISSIONS AND DEATHS BY NATIONALITIES

Race	Admissions	Deaths
Europeans	1	..
Eurasians	4	..
Chinese	317	30
Indians and Pakistanis	10	2
Malays	13	2
Others	..	..
Total ..	345	34

Table 5

ADMISSIONS AND DEATHS BY AGE GROUP

Age in Years	Admissions		Deaths	
0– 1	21		5	
1– 2	60	255	10	29
2– 3	59		3	
3– 4	57		5	
4– 5	36	74%	3	85%
5– 6	22		3	
6– 7	22		3	
7– 8	25	90	1	5
8– 9	12		1	
9–10	9		..	
10–15	16	26%	..	15%
15–20	2		..	
Above 20	4		..	
Total ..	345		34	

Table 6

DIPHTHERIA

ADMISSIONS AND DEATHS BY MONTH

——	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Cases ..	30	30	39	20	24	18	26	28	31	36	32	31	345
Died ..	4	3	5	1	3	1	1	5	5	2	2	2	34

A number of cases suspected of Diphtheria were admitted but on investigation they were diagnosed as follows:—

Bronchitis and Broncho Pneumonia ..	12 cases
Acute Tonsillitis	123 cases

A limited stock of Schick test Toxin was obtained from Government Medical Store and this was used on 169 children from the Convent of Holy Infant Jesus, Bras Basah Road, (59), Chinese Kindergarten School, Dixon Road (49), and the Canossa Convent, Aljunied Road (61).

The results are as follows:—

Table 7

Age Group	MALES			FEMALES		
	Total Tested	Schick Positive	Schick Negative	Total Tested	Schick Positive	Schick Negative
Years—						
1 plus ..	..	..	..	16	13	3
2 plus ..	..	..	..	7	4	3
3 plus ..	..	..	..	12	5	7
4 plus ..	5	2	3	16	4	12
5 plus ..	9	3	6	18	5	13
6 plus ..	17	3	14	18	3	15
7 plus ..	10	0	10	15	5	0
8 plus ..	9	2	7	11	2	9
9 plus ..	4	0	4	5	0	5
10 plus ..	4	0	4	3	1	2
Total ..	58	10	48	111	42	69

Out of the 169 children Schick tested 52 were Schick +ve 30.7 per cent.

43.3 per cent were Schick +ve in the age group 1+ to 5+ years.

18.6 per cent were Schick +ve in the age group 6+ to 10+ years.

The total number of children tested was rather small and conclusions cannot be drawn. The results do indicate that the younger age group of children 1–5 years are more susceptible to diphtheria.

TROPICAL TYPHUS

Three cases of Scrub Typhus type OXK and four cases of Urban Typhus type OX 19 were treated.

MEASLES

One hundred and eighty-two cases were treated with 8 deaths. All these cases died of Broncho Pneumonia complicating measles.

Table 8

DYSENTERY

Type of Dysentery	Admission	Death
Amœbic	122	2
Bacillary	18	..
Clinical	34	1
Total ..	174	3

Of the eighteen cases of Bacillary Dysentery ten were type FLEXNER, seven SONNE and one SHIGA.

Table 9

ACUTE ANTERIOR POLIOMYELITIS

ADMISSION BY MONTH

——	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Cases ..	3	11	14	10	5	6	7	6	2	5	..	1	70
Died ..	..	..	..	1	..	1	..	..	..	..	..	..	2

Table 10

AGE GROUP, SEX DISTRIBUTION AND TYPES OF CASES OF POLIOMYELITIS

Age		0–1 year		1–2 years		2–5 years		5–10 years		10–15 years		15–20 years		20–30 years		30–40 years		Total	
Sex		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Paralytic	Cases	7	5	12	8	15	9	4	..	1	..	3	1	1	2	..	2	43	27
	Died	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	1
Non-Paralytic ..	Cases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Died	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	Cases	7	5	12	8	15	9	4	..	1	..	3	1	1	2	..	2	43	27
	Died	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	1

Table 11

ADMISSION AND DEATH BY NATIONALITY AND SEX

Race	ADMISSION		DEATH	
	Male	Female	Male	Female
Europeans	2	1	..	..
Eurasians	..	..	..	..
Chinese	33	23	1	1
Indians and Pakistanis ..	1	2	..	..
Malays	4	2	..	..
Others	2	..	..	..
Total ..	42	28	1	1

Seventy cases of Polio were admitted during the year with two deaths—one adult female died in an iron lung within three days after admission due to cardiac and respiratory failure (Bulbar Type) and the other after fifteen days due to Gastro-enteritis.

A daily average of thirty-six in-patients were receiving Physiotherapy treatment.

Table 12

OTHER DISEASE

Diseases	Remaining from 1953	Admitted	Dis- charged	Died	Remaining
Malaria-S.T.	..	2	2	..	..
Dengue Fever	..	1	1	..	..
Rheumatic-Fever	..	1	1	..	..
Tetanus	..	1	1	..	..
Ankylostomiasis	..	2	2	..	..
Ascariasis	..	5	4	..	1
Pulmonary Tuberculosis ..	..	2	2	..	..
Syphilis	..	3	3	..	..
Cancer Rectum	..	1	1	..	..
Anæmia	..	1	..	1	..
Benign Lymphocytic Meningitis	..	1	1	..	..
Influenzal Meningitis ..	..	1	1	..	..
Hæmorrhoids	..	1	1	..	..
Acute Tonsillitis	4	123	126	..	1
Stevens Johnson Syndrom ..	..	1	1	..	..
Influenza	..	4	4	..	..
Broncho Pneumonia ..	1	8	7	2	..
Acute Bronchitis	..	4	4	..	..
Eosinophilic-Lung ..	..	1	1	..	..
Gastro Enteritis	2	14	16	..	..
Abscess of Liver	..	1	1	..	..
Nephritis	1	..	1	..	..
Pyelitis	..	3	3	..	..
Eczema	..	1	1	..	..
Boils and Carbuncles ..	..	3	3	..	..
Rheumatoid Arthritis ..	..	3	3	..	..
Post-Vaccinal-Encephalitis ..	..	1	1	..	..
Fracture Clavicle	..	1	1	..	..
Septic Feet	..	1	1	..	..
Peptic Ulcer	..	1	1	..	..
Total ..	8	192	195	3	2

Other diseases shown on Table XII above were admitted to this Hospital suspected to be suffering from Infectious diseases. After investigation and diagnosis they were either transferred to other Hospital or discharged.

ADMISSION OF THE IMPORTANT DISEASES FOR THE LAST TEN YEARS

Disease	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
Smallpox	1	99	41	5	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..	..
Cholera	..	1	..	..	..	..	..	..	..	..
Chickenpox	100	256	323	313	373	422	610	450	836	1,313
Measles	11	206	54	41	194	50	204	142	117	182
Rubella	..	5	49	5	6	1	11	9	..	1
Diphtheria Clinical*	78	140	155	216	254	257	469	427	332	345
Cerebro Spinal Meningitis	6	6	15	7	4	4	4	2	4	2
Typhoid Fever	95	74	59	53	62	88	91	117	91	123
Acute Anterior Poliomyelitis	..	137	..	134	68	81	78	50	41	70
Erysipelas	1	..	2	15	15	12	4	3	..	3
Whooping Cough	..	34	12	6	8	27	5	3	..	10
Scarlet Fever	..	..	..	..	..	..	79	..	..	..
Mumps	18	42	191	30	3	14	..	15	9	35
Tropical Typhus	1	3	1	6	8	3	7	92	4	7
Amœbic Dysentery	140	95	89	65	106	90	105	22	134	122
Bacillary Dysentery	193	15	5	1	11	9	18	9	25	18
Clinical Dysentery	1,538	48	6	40	..	17	40	..	16	34
Other diseases, observation and Carriers	887	540	387	861	566	696	492	455	440	649
Total ..	3,069	1,701	1,389	1,798	1,678	1,771	2,217	1,796	2,049	2,914

* Cases of Diphtheria Carriers were included up to 1951.

Table 13

NATIONALITIES AND DAYS IN HOSPITAL

	REMAINING 1953		ADMITTED 1954		TOTAL	
	No. of Patients	No. of Days	No. of Patients	No. of Days	Total No. of Patients	Total No. of Hospital Days
Europeans ..	2	10	32	269	34	279
Eurasians ..	1	6	78	679	79	685
Chinese ..	74	3,222	1,665	23,384	1,739	26,606
Indians and Pakistanis ..	19	818	853	7,431	872	8,249
Malays ..	4	295	217	2,627	221	2,922
Javanese ..	..	..	28	194	28	194
Others ..	..	..	41	394	41	394
Total ..	100	4,351	2,914	34,978	3,014	39,329

Table 14

Sex	Remained 1953	Admitted 1954	Total Treated	Discharged	Transferred	Absconded	Died	Total	Remaining end of 1954	Total Death Percentage	Average Daily Number of Patients	Number of Beds
Male	63	1,840	1,903	1,782	16	..	29	1,827	76	..	..	..
Female ..	37	1,074	1,111	1,019	25	..	29	1,073	38	..	..	..
Total ..	100	2,914	3,014	2,801	41	..	58	2,900	114	1.92	106.8	200

HOSPITAL IMPROVEMENTS IN 1954

1. Kitchen—

The expansion and modernisation of the Central Kitchen which started in December 1954 is expected to be completed in January 1955.

This will provide more space for cooking and storage.

2. A new Ambulance Garage is under construction with facilities for disinfection. This will be completed in January 1955.

3. The overhead service Water tank which was constructed in 1953, is not functioning due to lack of some particular size of steel joint. The tank will be in service when the above material is available.

STAFF

Acting Matron L. M. Powell returned from leave and resumed duty on 5th April, 1954. Sister M. I. Petrie assumed the post of Senior Sister from 14th March, 1954 on temporary service. Mr. K. M. Nadeson has been appointed as Senior Hospital Assistant from 7th June, 1954 in place of Mr. S. Ramachandra Senior Hospital Assistant who retired from service on 10th July, 1953. Staff Nurse Louise Wong has left for United Kingdom on August 1954 on two years Sino-British Scholarship.

Mr. Tan Peng Nam replaced as clerk in place of Mr. Carnegie who has been transferred to Health Department.

ACKNOWLEDGMENTS

We are grateful to the following:—

1. The British Red Cross Society and the *Singapore Standard* for their gifts of toys to the Polio children.

2. Professor G. A. Ransome, Professor J. A. P. Cameron and Mr. Karlon for their services as consultants to the Hospital.

3. Blood Transfusion Service for their valuable help in supplying Blood to some of our bad cases of Typhoid and Dysentery.

In conclusion, I wish to thank the members of the Staff for their Co-operation and spirit of service.

NG SEE YOOK, L.M.S., D.P.H.
Medical Superintendent,
Middleton Hospital.

CITY MARKETS

I HAVE the honour to submit the 32nd Annual Report on the City Markets of Singapore.

UNSOUND FOODSTUFFS

5,581 heads of Poultry, 13,949 eggs, 103 lb. of mutton and 244,941 katties (approximately 145.8 tons) of unsound foodstuffs were removed from the City Markets and delivered to the City Incinerators for destruction.

PUBLIC WEIGHING SCALES

Avery Spring Balances with a maximum weighing capacity of 28 lb. were maintained in good order for public use.

REVENUE FROM FISH AUCTION

Revenue for the 5 per cent Commission on Fish Auction Sales showed a decrease over the previous year as well as a slight decrease in the prices of fish. The quantity of fish landed for Auction showed a slight increase.

TABLE *A*

Market	Period	Quantity Landed and auctioned Kattis	Total Auction Value	Total of 5% commission collected
			$ c.	$ c.
Ellenborough	1954	6,678,853	3,289,639 60	164,481 98
Clyde Terrace	1954	2,849,666	1,263,103 00	63,155 15
Total ..			4,552,742 60	227,637 13

TABLE *B*

TOTAL REVENUE

Market	**1954**
1. Clyde Terrace	132,900 47
2. Kandang Kerbau	34,603 70
3. Orchard Road	30,043 72
4. Sims Avenue	12,328 00
5. Grange Road	4,336 30
6. Ellenborough	231,863 22
7. Telok Ayer	37,359 00
8. Maxwell Road	22,735 84
9. Sims Avenue	12,561 53
	518,731 78

RETURNS

Daily and weekly returns were made to the Department of Fisheries showing weight, place of origin and prices of fish passing through the Clyde Terrace and Ellenborough Markets. Monthly returns of the Average Market Prices were also made to the Department of Statistics, Singapore.

I attach the returns showing the quantity of Unsound Foodstuffs destroyed and a summary of the Vacant Stalls as at 31st December, 1954.

KOH CHENG KHIANG, CERT. R.S.I.,
Acting Market Inspector

SUMMARY OF UNSOUND FOODSTUFFS DESTROYED

FOR THE YEAR 1954

Market	FISH				MEAT			VEGETABLES AND FRUITS				POULTRY		Miscellaneous
	Fresh	Shell	Boiled	Salted	Beef	Mutton	Pork	Fresh Vegetables	Dry Vegetables	Salted Vegetables	Fresh Fruits	Livestock	Eggs	
	Kattis	Kattis	Kattis	Kattis	Kattis	Lb.	Kattis	Kattis	Kattis	Kattis	Kattis	Heads	Tens	Kattis
Clyde Terrace ..	3,155	95	..	..	..	..	..	20,200	..	..	2,680	796	109	..
Ellenborough ..	16,920	3,630	..	..	..	..	..	16,520	15,710	..	3,035	658	530	1,665
Telok Ayer ..	910	4,830	..	..	..	..	..	51,075	26,120	..	11,600	223	251	3,080
Kandang Kerbau	721	1,382	18	377	...	..	..	3,981	..	..	4,033	610	161	..
Orchard Road ..	440	2,204	..	..	426	..	..	4,901	..	..	6,061	190	..	2,355
People's Park ..	755	595	..	..	56	..	121	21,344	..	..	..	1,104	..	..
Maxwell ..	..	..	..	..	159	103	215	4,441	..	..	..	1,821	272	..
Grange Road ..	406	..	..	..	..	..	..	1,097	..	..	1,280	19	5.3	761
Sims Avenue ..	993	694	..	..	..	..	..	1,759	..	..	744	170	66.6	1,397
Total ..	24,300	13,430	18	377	641	103	336	125,318	41,830	..	29,433	5,581	1,394.9	9,258

SUMMARY OF VACANT SLABS AND STALLS FOR THE MONTH ENDING 31ST DECEMBER, 1954

Description	Clyde Terrace	Ellen-borough	Telok Ayer	Kandang Kerbau	Orchard Road	People's Park	Maxwell	Grange Road	Sims Avenue	Remarks
FISH (*a*) Fresh	24	2	5	..	11	19	30	4	4	
(*b*) Boiled	24	2	5	..	11	19	30	4	4	
MEAT (*a*) Beef	..	..	..	..	..	..	..	..	..	
(*b*) Mutton	..	..	..	..	..	3	..	..	..	
(*c*) Pork	..	1	..	..	..	16	..	..	1	
(*a*) Fresh Vegetables, Fresh Fruits and Fresh Eggs	..	..	..	..	..	..	36	3	1	
(*b*) Salted Vegetables	..	..	..	..	..	..	..	1	..	
(*c*) Dry Vegetables and Fresh Eggs ..	..	..	1	..	..	..	..	..	..	
(*d*) Dry and Salted Vegetables ..	..	..	..	..	..	..	..	..	..	
POULTRY: Livestock	..	8	..	..	..	1	1	..	..	
Eggs	..	..	..	..	..	..	..	..	..	
Salt Fish and Dried Vegetables ..	..	..	..	..	..	1	4	2	6	
MISCELLANEOUS:—										
Beancakes	..	..	..	..	..	..	6	..	..	
Cleaned Ducks and Chickens and Dressed Poultry	..	..	..	..	..	1	2		..	
Ground Assorted Spices	..	..	..	..	..	1	..	..	..	
Fancy Fish	..	..	..	..	..	..	..	..	..	
HAWKERS, Eating—Large	..	..	..	..	..	..	..	..	..	
Cooked Food	..	..	..	..	..	..	..	..	..	
BLOCK ICE	..	..	..	..	..	..	..	..	..	
SODA FOUNTAIN	..	..	..	..	..	..	..	..	..	
FROZEN MEAT	..	..	..	..	..	..	..	..	..	
Total ..	24	11	6	..	11	42	79	10	12	

CITY ABATTOIRS

During the year 387,907 animals were slaughtered in the City Abattoirs; 318,575 were swine, 4,389 oxen, 1,825 buffaloes, 13 horses, 60,868 sheep and 2,237 goats.

128 swine, three oxen, one buffalo, 209 sheep and sixteen goats died in the pens. 105 swine died in the depot. Twenty-five swine, forty-four oxen, two buffaloes 109 sheep and one goat carcases were totally condemned.

Three swine condemned for Swine Fever were reported to G.V.O.

J. L. da SILVA,
Superintendent of Abattoirs.

——	Swine	Oxen	Buffaloes	Horses	Sheep	Goats
Admitted for slaughter, 1954 ..	318,780	4,396	1,863	13	61,110	2,265
Slaughtered 1954	318,575	4,389	1,825	13	60,868	2,237
Died in pens	128	3	1	..	209	16
Died in depot	105	..	..	..	..	..
Carcases condemned ..	25	44	2	..	109	1
Diseased organs, etc. condemned and destroyed in tons ..	9.3	3.8	2.5	..	3.8	0.06

TOTAL RECEIPTS FOR THE YEAR 1954

	$	c.
Fees for slaughter at Cattle section	18,816	00
Fees for slaughter at Sheep section	63,375	00
Fees for slaughter at Pig section	637,560	00
Fees for storage at French Road Depot	8,786	15
Fees for inspection of wild boar carcases	350	00
Receipts for sale of blood	360	00
Receipts for sale of pigs' bristles	180	00
Receipts as pen rents (all slaughter houses) ..	24,417	60
Total Receipts for the year 1954 ..	753,844	75
Total Receipts for the year 1953 ..	768,680	50
Special slaughtering licences issued during the year 1954 (5 pigs at $10 each, 2 oxen at $15 each, and 23 sheep and 9 goats at $5 each)	240	00

ANIMALS SLAUGHTERED MONTHLY IN CITY ABATTOIRS DURING THE YEAR 1954.

——	Swine	Oxen	Buffaloes	Horses	Sheep	Goats
January ..	27,631	426	55	2	4,818	242
February ..	45,180	404	86	1	4,672	197
March ..	26,961	234	295	2	4,939	131
April	26,446	339	143	1	4,857	148
May	26,783	425	99	..	5,183	163
June	26,948	404	120	2	5,264	154
July	27,165	467	18	..	4,872	206
August ..	28,034	379	165	1	5,621	199
September ..	25,993	203	271	3	4,775	184
October ..	26,140	362	142	1	5,372	239
November ..	24,927	378	168	..	4,971	182
December ..	26,367	368	263	..	5,524	192
Total slaughtered during 1954 ..	318,575	4,389	1,825	13	60,868	2,237
Total slaughtered during 1953 ..	327,853	5,568	1,101	11	56,506	2,022

CARCASES TOTALLY CONDEMNED DURING THE YEAR 1954

———	Swine	Oxen	Buffaloes	Sheep	Goats
1. Cas. Lymphadenitis ..	..	..	..	4	..
2. Cysticercosis	6	1	..	..	..
3. Dropsy	..	..	1	5	..
4. Extreme Emaciation ..	..	2	..	1	..
5. Gangrenous Pneumonia ..	..	1	..	6	1
6. Generalised Tuberculosis ..	..	30	1	..	..
7. Generalised Bruising ..	..	..	..	3	..
8. Jaundice	3	3	..	30	..
9. Moribund	..	1	..	..	..
10. Pyrexia	10	2	..	56	..
11. Septic Mammitis ..	..	1	..	..	..
12. Septic Metritis ..	..	1	..	..	..
13. Septic Pericarditis ..	..	2	..	..	..
14. Septic Peritonitis ..	1	..	..	2	..
15. Septicaemia	2	..	..	2	..
16. Swine Fever	3	..	..	..	..
Total cond. during 1954 ..	25	44	2	109	1
Total cond. during 1953 ..	31	12	4	62	..

CASES OF PARTIAL CONDEMNATION

———	Swine	Oxen	Buffaloes	Sheep	Goats
Abscess	15,692	2	2	5	1
Adhesions	..	..	..	1	..
Angiomatosis	1	3	..	..	..
Bruising and/or Fracture	3,783	62	9	103	3
Cas. Lymphadenitis	..	..	..	8,015	..
Cirrhosis	78	12	1	12	..
Congestion	5,025	3	4	2,780	3
Cysticercosis	3	5	..	..	..
Cysts	53	2	4	216	2
Dropsy	..	..	3	2	3
Fascioliasis	..	1,866	823	..	46
Fatty Infiltration	17	14	2	1,246	1
Foot Rot	..	1	1	2	..
Hydronephrosis	63	..	..	1	..
Inflammation	219	18	5	283	4
Maggots	..	..	..	39	3
Mastitis	4	9	..	..	..
Melanosis	3	1	..	172	5
Metritis	..	8	..	..	..
Necrosis	17	..	..	2	..
Nephritis	295	3	2	27	..
Onchocerciasis	..	499	..	..	..
Parasites	377	..	..	..	..
Pericarditis	56	..	2	9	..
Peritonitis	62	..	..	..	..
Pleurisy	477	..	1	90	1
Pneumonia	376	3	1	28	3
Pregnancy	31	89	74	..	4
Sarcosporidiosis	..	..	1,336	..	..
Strongylosis	3	1	..	307	..
Tuberculosis	..	96	..	..	..
Urticaria	1	..	..	..	..

ITEMS OF INTEREST—1954

1. There were three cases of Swine Fever during the year—one in November and two in December. The Acting City Veterinary Surgeon was called in and he reported the cases to the Government Chief Veterinary Officer.

2. There was a buffalo carcase condemned for Generalised Tuberculosis; Tuberculosis is very uncommon in buffaloes.

3. We had four Probationary Assistant Superintendents added to the staff in September, making a full complement of eight Assistant Superintendents.

SANITARY INSPECTORS SECTION

STAFF

The vacant post of Senior Sanitary Inspector was filled on the 1st February, 1954, by the promotion of one of the Qualified Sanitary Inspectors.

Four probationary Sanitary Inspectors attended as candidates for a period of nine months, the Royal Sanitary Institute Course which began on the 1st February, 1954. All the candidates were successful in the examination which was held in November 1954.

The staff as at 31st December, 1954 is as follows:—

C.S.I.	D.S.Is.	S.S.Is.	F. and D.Is.	Q.S.Is.	P.S.Is.	Total
1	2	4	3	21	8	39

SANITARY WORK

House to House Inspection

Ten days were spent on house to house inspection of a routine nature. 114 houses were inspected.

Kampong Inspection

Kampong inspections were carried out in connection with:—

(*a*) Kampong Sanitation;
(*b*) Enforcement of the Swine By-laws;
(*c*) Checking new huts within the City area;
(*d*) Checking new structures other than huts in dwelling houses within the City area.

115 days were spent during which 2,364 premises were inspected.

Complaints

A total of 902 complaints were received from the public involving 9,587 visits.

Complaints	No. of Complaints	Primary Visits	Revisits	Total visits and revisits
Mosquito	529	3,354	4,208	9,587
Other	373	2,025		

Infectious Diseases

The following cases of infectious diseases were investigated.

Polio-myelitis	Diphtheria	Chicken-pox	Typhus	C.S.M.	Leprosy	Typhoid
53	267	1,057	15	2	120	120

In connection with the above, the following work was carried out.

Diphtheria Throat Swabs	Removal to Middleton Hospital	Barrier spraying re Poliomyelitis	Total Visits
1,909	443	39	2,810

Notices

The following is a summary of notices served.

Type of Notice	B/f	Served	Total	Complied with	Cancelled	C/f
Intimations	55	348	403	210	24	169
Limewash	56	237	293	266	1	26
Nuisance Notice	27	65	92	47	2	43
Abatement Order ..	3	3	6	4	..	2
Prohibition Order ..	..	1	1	1	..	..
Well Notice	..	25	25	15	..	10
Total ..	141	679	820	543	27	250

Food and Drugs

845 samples were taken by the Sanitary Staff for chemical analysis, bacteriological examination and other breaches of the Food and Drugs Regulations, of which 482 samples were taken by the Sanitary Inspectors and the remaining 363 by the Food and Drugs Inspectors. Of these, sixty-five samples were taken for bacteriological examination. For details, please see Appendix *I*, Table *A*.

Routine inspection of premises in connection with unsound food was carried out by the Food and Drugs Inspectors involving 8,586 visits. For summary of foodstuffs surrendered and destroyed, please see Table *B* of Appendix *I*.

Inspection of Premises

Inspections carried out on other classes of premises not included in the above, total 34,622 visits as follows:—

Sauce Factories	197
Oilmills	155
Sawmills	84
Places of Entertainment	360
City Markets	531
Private Markets	371
Coffee Grinding Mills	46
Printing Press	406
Licensed Premises	23,830
Public Houses	550
Native Passenger Lodging Houses ..	36
Daily Fines	13
Serving Notices	854
Inspecting Notices	953
Cautioning Cases	194
Using Night-soil as Manure	6
Unlicensed Premises	1,749
Goldsmiths	30
Dry Cleaners	22
Smoke Observations	38
Foundries	4
Other Premises	4,193
Total ..	34,622

In connection with the visits to:—

(*a*) Places of Entertainment;
(*b*) Printing Presses;
(*c*) Public Houses;
(*d*) Native Passenger Lodging Houses,

these inspections were made generally for the purpose of putting up recommendations with regard to the licensing, registration or renewal of licences under the control respectively of (1) Police Department (2) Chief Secretary (3) Customs Department (Board of Licensing Justices) (4) Criminal Investigation Department (Special Branch).

During the year, 199 plans were received from the City Architect and Building Surveyors Department, for comments generally with regard to the drainage, sanitary accommodation, working facilities and the siting of septic tanks including the discharge of the effluent. The number of inspections made in this connection are included under the heading of 'Other Premises'.

Reports to other Departments

A total of 561 reports were made to various departments in the City Council with regard to irregularities observed during the course of the Sanitary Inspectors' rounds.

City Cleansing Department	155
City Sewerage Department	51
City Building Department	247
Other Departments	108
Total ..	561

Offences and Prosecutions

452 summonses were applied for all types of infringements of the Ordinance and By-laws.

Court proceedings took up 200 man working days. There were 451 prosecutions with 398 convictions. Seven summonses were withdrawn and forty-six not served. Total fines amounted to $20,287.30.

Meat Inspection

Owing to the shortage of the staff at the City Abattoirs, 2 Sanitary Inspectors were seconded for duty at the pig abattoirs on a weekly roster, from the beginning of the year.

The number was reduced to one with the appointment of additional inspectors in that department in the month of September 1954.

Plague Prevention Section

Total Number of rats caught in the City Area	4,616
Number of Fleas combed from the rats ..	2,321
Number of Mites combed from the rats ..	91

Cemetery Section

Burial in Public Cemeteries	6,135 (178)*
Burial in Private Cemeteries	907
Total ..	7,042
Exhumations	21

For Number of Burials by Race *see* Table *C*.

*Figure in brackets denotes cremations.

GENERAL

Strike by City Council Labourers

During the period of the strike from the 19th July to the 31st July, ten Sanitary Inspectors were seconded to the City Cleansing Department for full time work as supervisors in the collection and disposal of refuse.

The duties of the remaining staff of Sanitary Inspectors consisted mainly in preventing the spread of infectious diseases during this period i.e.—

(*a*) Investigating and/or removal of all cases of all infectious diseases in the City.

(*b*) Spraying with Gammexane collections and dumps of refuse in various parts of the City to prevent fly breeding until removed by the emergency squads of the City Cleansing Department.

(*c*) Preparing daily lists of refuse dumps within the City Limits for removal by the City Cleansing Department.

(*d*) Supervising the clearance of choked drains and culverts.

(*e*) Prevention of fly breeding in the City Cleansing dumping grounds at Bendemeer. In this connection the specially equipped Jeep for mechanical spraying of insecticides, operated by the Sanitary Inspectors was used daily.

(*f*) Removal of the refuse from all public markets daily as far as possible.

Assessment of the Flood Damage in the Kampongs.

With the subsidence of the floods in December 1954, teams made up of Government and City Council employees were formed on the morning of the 20th December, 1954 to assess the damage caused by the floods in the agricultural areas within the City. In this connection twelve Sanitary Inspectors were detailed for this work.

The Sanitary Inspectors formed the No. 1 man or vanguard of each of the twelve teams.

Their duties were (1) to identify and number in proper sequence each and every hut in the given sector.

(2) To enumerate every member of each household including the checking of age, sex, and identity card or birth certificate numbers details of which had to be recorded on the form provided.

(3) Issuing to the head of household a reference slip bearing the same serial as the house enumeration.

(4) Revisits to premises in which full particulars could not be obtained during first visit.

(5) Report at Headquarters as and when necessary.

The actual assessment was the responsibility of a Government Department member of each team.

The survey commenced on the afternoon of 20th December, 1954 and was completed on 26th December, 1954 which included two public holidays namely Christmas Day and Boxing Day.

Rehabilitation of the Farmers

On the request of the Government Veterinary Department six Sanitary Inspectors were detailed from the 28th December, 1954 to the 31st December, 1954 to assist the Government Veterinary Department and the Department of Commerce and Industry in the distribution of foodstuffs, chicks, ducklings and fertiliser to the farmers who were victims of the recent floods.

The distribution centres were at St. Andrews School and two Chinese temples in the Braddell Road area.

The foodstuffs consisted of cargo rice, maize bran etc. the fertiliser being prawn dust.

In addition a few thousand chicks and ducklings were also distributed.

Food and Drugs Section

Re Lead in Chinese Drugs. In the latter part of 1954 information was received from the Department of Social Medicine University of Malaya that two cases of lead poisoning were reported in the General Hospital and the cause was traced to a red Chinese Medicine, a powder preparation called "Choo Sa, Sng Sa". As a result of this, the Food and Drugs Inspectors carried out extensive investigations regarding the importation and sale of this drug which is commonly used by the Chinese for the treatment of children suffering from shock and palpitation of the heart. Samples of the drug were submitted for analysis and found to contain high contents of lead, and in one instance as much as 14.2 per cent. Court proceedings were instituted against the offenders and in all cases deterrent fines were imposed by the Magistrate who also made an Order under Section 15 of the Sale of Food and Drugs Ordinance for the publication of particulars of the convictions in the local newspapers. This information was also forwarded to the Directors of Medical Services, Singapore, Sarawak, British North Borneo and Hong Kong.

At present great difficulty is experienced in obtaining further samples of "Choo Sa, Sng Sa" and other Chinese Drugs such as "Yim Seah San", "Pai Pan Chin Tong Fong San", "Po Ying Pills", etc. as they are now no longer being openly exposed for sale in the Chinese Medicine Shops. However, every possible effort is being made to trace the sale of these preparations and other Chinese drugs with a view to prosecution.

During the year there were 8,710 man working days which were spent as follows:—

Sanitary Work	Abattoirs	Burial Grounds	Sick Leave	Infectious Diseases Duties	Vacation Leave
7,196	699	..	32	365	418

The total number of visits during the year covering all categories of work was 57,598.

L. A. MARCUS,
Chief Sanitary Inspector.

10*th March*, 1955.

APPENDIX I

Table A

SAMPLES TAKEN FOR CHEMICAL ANALYSIS

1. FOOD

Colouring, Flavouring and Preserving Agents:—

Food flavouring powder	7
Colouring powder	9
Cherry essence	1
Citric Acid Crystals	1

Spices and Condiments:—

Pepper Powder	11
Pepper Mixture	4
Curry Mixture	2

Coffee, Coffee Mixtures and Extracts:—

Coffee and Chicory	1
Coffee Powder	8
Coffee Mixture	40
Tea	6

Beverages:—

Whisky	6
Brandy	1
Rum	1
Soda Water	62
Aerated Waters (Sweet)	45
Non Carbonated beverages	14
Syrups and Cordials	29
Fruit Squash and Juices	9

Fish and Fish Products:—

Fish Curry	1
Fish and Soya Bean	1
Prawn Paste	7
Fish Sauce	1
Caviare	1
Shrimp Paste	1

Cereals, Beans etc.:—

Pearl Barley	1
Soya Bean	2

Fruit and Vegetable Products:—

Mushrooms	5
Cherries in Syrup	1
Dalcha (Vegetable Curry)	1
Desiccated Coconut	4
Tomato Puree	1
Rambutan and Syrup	1
Water Caltrops	1
Mixed Ginger	1
Blackberries	1
Carried forward	288

Brought forward	288

Edible Oil and Fats:—

Mustard Oil	2
Gingelly Oil	5
Coconut Oil	8
Cooking Oil	10
Cooking Product	8
Ground Nut Oil	2

Sauces:—

Soya Bean Sauce	6
Chillie Sauce	6
Tomato Sauce	1
Sauce Mixture	1
Chinese Treacle	1

Milk and Milk Products:—

Milk	159
Sweetened Condensed Milk	22
Evaporated Milk	16
Milk Powder	6
Skimmed Milk Powder	1
Butter	4
Ghee	5
Infant Food	3
Ice Cream	2
Other Milk Products	4

Meat and Meat Products:—

Ham	2
Mutton Keruma	1
Chicken Curry	2
Mutton Curry	2
Mutton Serondeng	1

Confectionery:—

Sweets	31

Vinegars:—

Rice Vinegar	2
Artificial Vinegar	1

Miscellaneous:—

Egg Jam (Kaya)	3
Durian Jam	1
Almond Powder	2
Honey	1
Popsicle	5
Liquid Glucose	2
Sugar	3
Peppermint, Menthol, and Lemon Oil Mixture	1
Coconut Milk	1
Mixture from pre-mixing tank	6
Carried forward	627

Brought forward	627

2. DRUGS

B.P. and B.P.C. Drugs:—

Glycerine	4
Citronella Oil	2
Olive Oil	5
Cinnamon Oil	1
Eucalyptus Oil	1
Pot. Citrate	1
Pot. Bromide	2
White Draught	3
Aureomycin	1
Vitamin B1 Tablets	10

Proprietary Drugs:—

Lemon Draught	1
Iron Tonic	1
Purgative (Sweetened)	4
Omum Water	1
Worm Oil	3
Sweetened Castor Oil	2
Carried forward	669

Brought forward	669

Chinese Drugs:—

"Sng Sa"	1
"Choo Sa"	2
Worm Powder	6
Throat Powder	1
"Bobo Tan"	1
"Keng Fung San"	2
"Pai Pan Chin Foong San"	4
"Yim Seah San"	7
"Po Ying Pills"	2
"Keng Foong Yuen"	1

3. OTHERS

Metal Moulds	4
Crown Caps	1
Water from tank	2
Well Water	68
Total	771

SAMPLES TAKEN FOR BACTERIOLOGICAL EXAMINATION

Ice Cream	40
Popsicles	18
Lollipops	3
Drinking Straws	4
Total	65

SAMPLES TAKEN FOR INCORRECT LABELLING

Sweetened Condensed Milk	4
Evaporated Milk	1
Tea Dust	1
Margarine	1
Pepper Powder	1
Fragrant Sweetened Castor Oil	1
	9

Table B

SUMMARY OF FOODSTUFFS SURRENDERED AND DESTROYED

Crates	Cases	Boxes/ Packages	Tins	Bottles/ Jars	FOOD BY WEIGHT	
					Katties	Pounds
18	49	89	13,640	510	835	2,974½

Table C

BURIAL GROUNDS

1954	Burials and Cremations made in City Cemeteries and licensed burial grounds in City Area	Exhumations
Europeans	73	5
Eurasians	96	..
Chinese	4,742 (5)	15
Malays	1,163	
Indians	913 (171)	1
Others	55 (2)	
Total ..	7,042 (178)	21

RETURN OF LICENCES ISSUED UNDER THE FOOD SHOP BY-LAWS

DURING THE YEAR 1954

Nature of Licence	Per Annum $	Number Issued	Cash Received $ c.	DETAILS OF LICENCES ISSUED For One Year	For One Month	For 2 Months	For 3 Months	For 4 Months	For 5 Months	For 6 Months	For 7 Months	For 8 Months	For 9 Months	For 10 Months	For 11 Months	Re-issue
Eating House	48	946	43,604 00	874	4	11	9	6	..	10	5	9	12	5	1	31
Restaurant	48	311	14,460 00	298	1	3	2	3	1	2	1	1	2	..	..	6
Coffee Shop	48	153	7,188 00	146	..	..	..	2	1	..	1	2	1	..	..	4
Iced Water and Cold Drinks	48	52	2,388 00	46	..	..	..	1	..	..	..	4	1	..	..	5
Soda Fountain	48	9	416 00	8	..	..	..	..	..	..	..	1	..	..	..	..
Meat Shop	48	111	5,060 00	99	1	3	1	2	..	1	1	..	1	1	1	5
Possession of Wild Boar Flesh	48	3	144 00	3	..	..	..	..	..	..	..	..	..	..	..	..
Milk Seller	12	57	684 00	57	..	..	..	..	..	..	..	..	..	..	..	..
Aerated Water Factory	48	13	592 00	12	..	..	..	1	..	..	..	..	..	..	..	..
Bakery	48	31	1,400 00	28	..	1	..	..	..	2	..	..	..	..	..	2
Biscuit Factory	48	5	240 00	5	..	..	..	..	..	..	..	..	..	..	..	..
Cake Shop	48	36	1,608 00	33	1	1	1	..	..	..	..	..	..	..	..	2
Ice Cream Factory	48	5	240 00	5	..	..	..	..	..	..	..	..	..	..	..	..
Ice Popsicle Manufactory	48	1	48 00	1	..	..	..	..	..	..	..	..	..	..	..	..
Syrup Making Shop	48	2	96 00	2	..	..	..	..	..	..	..	..	..	..	..	..
Sweets Making Shop	48	10	448 00	9	..	..	..	1	..	..	..	..	..	..	..	..
Margarine Factory	48	2	90 00	2	..	..	..	..	..	..	..	..	..	..	..	..
Confectionery	48	1	48 00	1	..	..	..	..	..	..	..	..	..	..	..	..
Food Shop	48	28	1,288 00	26	..	1	..	..	..	..	..	1	..	..	..	..
Food Caterer	48	1	48 00	1	..	..	..	..	..	..	..	..	..	..	..	..
Dairy Shop	48	2	72 00	1	..	..	..	..	..	1	..	..	..	..	..	..
Total ..		1,779	80,168 00	1,654	7	20	13	16	2	16	8	18	17	6	2	55

RETURN OF LICENCES ISSUED UNDER THE OFFENSIVE TRADE BY-LAWS

DURING THE YEAR 1954

Nature of Licence	Per Annum $	Number Issued	Cash Received $ c.	DETAILS OF LICENCES ISSUED For One Year	For One Month	For 2 Months	For 3 Months	For 4 Months	For 5 Months	For 6 Months	For 7 Months	For 8 Months	For 9 Months	For 10 Months	For 11 Months	Re-issue
Private Market	600	8	4,700 00	7	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .
Importation of Meat	. .	14	5,692 80	13	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .
Sick Receiving House	1	4	4 00	4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Charcoal Making	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Blachan Store	36	2	72 00	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Brick Kiln	75	2	150 00	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Coffee Roasting Factory	18	6	108 00	6	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Dye House	18	5	90 00	5	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Drying and Sorting Fish	54	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Fruit Preserving	75	2	150 00	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Knacker's Yard	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Lime Making	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Lye Making	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Laundry	12	309	3,708 00	309	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Oil Mill	18	15	252 00	13	. .	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	1
Offal Boiling	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Pottery Works	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Rags and Bones Store	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Refining Precious Metals by the Acid Process	18	9	162 00	9	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Sago Factory	75	4	300 00	4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Sauce Factory	18	20	342 00	18	. .	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	1
Sauce Mixture Factory	18	2	36 00	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Sheep or Goat Pen	18	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Soap Boiling	18	6	108 00	6	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Sugar Boiling	75	3	162 50	2	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Tannery	75	3	225 00	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
CATTLESHEDS, PONYSTABLES, COWSHEDS:																
9 Animals and Under per head @	1.50	1	7 50	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
10—14 Animals	15.00	1	15 00	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
15—24 Animals	22.50	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
25—50 Animals	37.50	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Over 50 Animals	75.00	1	75 00	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Total		417	16,359 80	410	. .	1	. .	1	. .	4	. .	. .	. .	1	. .	3

HEALTH DEPARTMENT

RETURN OF PROSECUTIONS FOR THE YEAR 1954

Offences	TOTAL					Remarks
	Prosecutions	Withdrawn	Not Served	Convictions	Fines	
MUNICIPAL ORDINANCE					$ c.	
Obstructions .. .. .. Section 120	..	..	..	..	..	
Offensive matter flowing into Public Drain ,, 131	..	..	..	..	..	
Establishing a private market .. .. ,, 198	..	..	..	..	..	
Unlicensed Offensive Trades .. .. ,, 211	34	1	10	23	1,448 40	
Using Fish manure for cultivation .. ,, 214	1	..	..	1	20 00	
Latrine etc. notice not complied with .. ,, 219	..	..	..	..	..	
Nightsoil kept for more than 48 hours .. ,, 223	..	..	..	..	..	
Filthy premises .. .. .. ,, 233	13	..	..	13	250 00	
Limewash notice not complied with .. ,, 234	1	..	..	1	20 00	
Non-compliance of notice for the destruction of rats and mice .. .. ,, 235	..	..	..	..	..	
Non-compliance of notice of demolition order of insanitary dwelling .. ,, 236	..	..	..	..	..	
Allowing premises to be overcrowded .. ,, 237	..	..	..	..	..	
Non-compliance with Nuisance Notice .. ,, 246	5	..	..	5	235 00	
Non-compliance with Nuisance Order .. ,, 247	..	..	..	..	..	
Non-compliance with Closing Order .. ,, 247	..	..	..	..	..	
Non-compliance of order for demolition of house unfit for human habitation .. ,, 248	..	..	..	..	..	
Non-compliance with Well Notice .. ,, 254	..	..	..	..	..	
Opening Well without permission .. ,, 254	..	..	..	..	..	
License not exhibited .. .. ,, 381	..	..	..	..	..	
Breaches of Offensive Trades Byelaws .. ,, ..	5	..	..	5	50 00	
BYELAWS-SECTIONS 58 AND 211 M.O.						
Unlicensed Foodshops	183	2	14	167	6,820 90	
Unlicensed Milk Vendors	10	..	2	8	195 00	

HEALTH DEPARTMENT—*continued*

RETURN OF PROSECUTIONS FOR THE YEAR 1954—*continued*

Offences	TOTAL					Remarks
	Prosecutions	Withdrawn	Not Served	Convictions	Fines	
BYELAWS—SECTIONS 58 AND 211 M.O.—*contd.*					$ c.	
Opening licensed premises during prohibited hours ..	3	..	..	3	30 00	
Conveying milk for sale without regulation bottles ..	..	..	..	..	..	
Failing to have name and address marked upon the vehicle/can	..	..	..	..	..	
Keeping Swine in a prohibited area	8	..	2	6	295 00	
Filthy Stables, Cowsheds etc.	..	..	..	..	..	
Breaches of the Foodshop Byelaws	25	..	1	24	550 00	
MARKETS AND SLAUGHTER HOUSES						
Selling vegetables within 50 yards of market Section 193	..	..	..	..	..	
Unsound Food .. .. .. ,, 199	..	..	..	..	..	
Slaughtering Animals except in Abattoirs .. ,, 204	19	..	2	17	1,940 00	6 Police Arrest Cases
Market Byelaws .. .. .. ,, ..	39	..	..	39	335 00	
Possessing die and other instruments for counterfeiting Slaughter House Mark .. ,, 209–1	1	..	..	1	250 00	
SALE OF FOOD AND DRUGS ORDINANCE						
Selling Adulterated Milk .. .. Section 11–1	26	..	14	12	1,310 00	
Selling Adulterated Coffee Mixture .. ,, 11–1	15	..	..	15	950 00	
Selling Adulterated Glycerine .. .. ,, 11–1	1	1	..	..	..	
Selling Adulterated Gingelly Oil .. ,, 11–1	7	..	..	7	1,000 00	
Selling Milk Deficient in Fat .. .. ,, 11–1	1	..	1	..	..	
Selling adulterated Zinc Oxide Ointment .. ,, 11–1	1	..	..	1	..	
Selling Adulterated Mustard Oil .. ,, 11–1	1	..	..	1	250 00	

RETURN OF PROSECUTIONS FOR THE YEAR 1954—*continued*

Offences	TOTAL					Remarks
	Prosecutions	Withdrawn	Not Served	Convictions	Fines	
SALE OF FOOD AND DRUGS ORDINANCE—*contd.*					$ c.	
Selling Adulterated Chinese Drug "Yim Seah Sun" .. .. .. Section 11–1	1	..	..	1	100 00	
Selling Adulterated Chinese Drug "Choo Sa" ,, 11–1	7	..	..	7	1,750 00	
Selling Adulterated Gingelly Oil and not bearing a label and Statement in English ..	2	..	..	2	835 00	
Selling Gingelly Oil w/o bearing label in English ..	2	..	..	2	150 00	
Selling Pepper Mixture bearing a false label ..	1	..	..	1	500 00	
Selling Desiccated Coconut bearing a false label ..	1	..	..	1	10 00	
Selling Cinnamon Oil bearing a false label ..	1	..	..	1	25 00	
Selling Eucalytus Oil bearing a false label	1	..	..	1	35 00	
Selling Orange Juice containing Saccharin ..	1	..	..	1	300 00	
Selling Soya Bean Sauce containing Saccharin ..	4	..	..	4	460 00	
Q. AND P. DISEASE ORDINANCE						
Failing to report case of Infectious Disease Section 3	..	..	..	..	..	
Moving patient without permission .. ,, 19	..	..	..	..	..	
Exposing patient while suffering .. ,, 19	..	..	..	..	..	
Conveying patient in public vehicle .. ,, 24	..	..	..	..	..	
Failing to have child vaccinated .. ,, 43–1	31	3	..	28	173 00	
Failing to bring child for inspection .. ,, 44	..	..	..	..	..	
REGISTRATION BIRTHS AND DEATHS ORDINANCE						
Failing to Register Births .. .. Section 9	..	..	..	..	..	
Failing to Register Deaths .. .. ,, 13	..	..	..	..	..	

HEALTH DEPARTMENT—*continued*

RETURN OF PROSECUTIONS FOR THE YEAR 1954—*continued*

Offences		TOTAL					Remarks
		Prosecutions	Withdrawn	Not Served	Convictions	Fines	
DESTRUCTION OF MOSQUITOES ORDINANCE						$ c.	
Failing to comply with notice ..	.. Section 9–1	..	..	..	..	..	
Recovery of costs of work done	.. ,, 8–1	..	..	..	..	..	
Destroying Anti-Malarial Works	.. ,, 15	..	..	..	..	..	

SUMMARY

Total Prosecutions	451
,, Withdrawn	7
,, Not Served	46
,, Convictions	398
,, Fines	$20,287.30

Costs = $195.00.

N.B.—Costs are not included in the amount of fines.